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ERRATUM.

Vol. xv. Botany, p. 491, line 6 from the bottom, for *Agaveæ* read *Aloineæ.*

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THE JOURNAL

OF

THE LINNEAN SOCIETY.

MISSOURI BOTANICAL

Note on the Uses of a commercial Cane termed "Whangee," a Species of *Phyllostachys*. By JOHN R. JACKSON, A.L.S.

[Read December 21, 1876.]

UNDER the name of "Whangee," a jointed bamboo is imported in considerable quantities into this country, it is said from China, for the manufacture of walking-canes. For a long time the scientific name of the plant producing these canes was quite unknown; latterly, however, they have been attributed to the genus *Phyllostachys*, *P. nigra* being the species chiefly accredited with their production; on this point, however, there is still some doubt. From whatever species of bamboo they may be produced, one thing seems clear, that the "Whangee" canes, as seen in trade, are not the stems proper, as is generally supposed, but the underground stems, the small circular markings surrounding each joint being the scars whence the roots have been given off, and the indentations on the alternate sides the points from which the aerial stems have arisen. The above-ground stems assume a different character, being, of course, minus the root-scars, which is a distinguishing mark and a point of beauty in the commercial cane. Thus two distinct canes seem to be produced by the same plant, one from the underground, and the other from the above-ground stem. The specimen (exhibited at the Meeting), which is from a plant grown at Chatsworth, seems to me sufficiently to illustrate this. One thing is remarkable, that all the imported "Whangee" canes are white, while the English-grown specimen is black. This I can account for only by supposing the former to be systematically bleached at the same time that they are straightened before exportation. The length required for a walking-stick is perhaps unusual for the rhizome of a bamboo; but this may be attained by keeping the stem buried beneath the soil until it has grown to a sufficient length. That this may be done as a system is possible, when we know that in Algeria the young sticks of the Medlar are gashed transversely, while they are growing, to give them a knotted appearance, and so enhance their value in the market.

New British Lichens. By the Rev. W. A. Leighton, B.A., F.L.S.

[Read December 7, 1876.]

(Abstract.)

In this communication the author describes in detail, and gives coloured drawings from nature, of the following eleven examples of Lichens new to Britain, of which the diagnosis &c. will appear in due course in the Society's 'Transactions.'

- *Lecidea impressula*, n. sp.
- *L. tephrizans*, n. sp.
- *L. ryssolea*, n. sp.
- *L. imponens*, n. sp.
- *L. glaucomeria*, n. sp.
- *L. parellaria*.
- *L. endomelæna*, n. sp.
- *Odontotrema majus*, n. sp.
- *Verrucaria neottizans*, n. sp.
- *V. fumosaria*, n. sp.
- *V. pertenuis*, n. sp.

On the Root-stock of *Marattia fraxinea*, Sm. By John Buchanan, F.L.S., of the Geological Survey of New Zealand.

[Read February 15, 1877.]

(Plate I.)

Marattia fraxinea, as now determined in the 'Species Filicum' of Hooker and Baker, has a very extensive range, being noted as found in South Africa, East Indies, Australia, and in several islands of the Pacific ocean. In New Zealand it is found only in the northern part of the North Island. In the eastern portion of this district it is very rare, being probably confined to two localities of limited areas at the Bay of Islands and Whangarei Bay.

The rootstock of this fern is used by the Maories as an article of food; but they have never cultivated it in a systematic manner; they say that if a rootstock is smashed into numerous pieces and thrown on the ground, every piece will form a new plant: in this way they may have occasionally increased the number by scattering portions about in places suited to its growth. It is evident, however, that whether they used any means or not to increase the plant, it is always rare wherever they themselves are numerous; and it is only in a few localities in the western part of the district, where there are few native settlements, that it is abundant.

When transplanted to the southern parts of the North Island, as at Wellington, this fern grows freely in rich damp soil on the banks of creeks under the shade of trees.

At the commencement of the present year the Hon. W. B. D. Mantell received from Taranaki a sackful of what was called pieces of the rootstock of the Uwipara (*Marattia fraxinea*); they appeared, from their uniformity in shape and covering of black cuticular bark, to be more like distinct individual bodies than broken pieces from a large mass. A number of these bodies were planted out in the Botanical Garden, Wellington, and a number in Mr. Mantell's garden; and I was induced to watch the progress and method of their growth, and also to examine the structure of the mature rootstock of the full-grown plant. The following notes are therefore the result of observations made on the New-Zealand species of this genus (*M. fraxinea*, Sm.), as to its method of reproduction by the root, which may add to the present knowledge on this subject.

The rootstock or rhizome of *Marattia* is described by Hooker in the 'Flora of New Zealand' as "a large, rounded, hard, fleshy mass as large as the head," and in the 'Handbook of the New-Zealand Flora' as "a large tuberous rhizome." Again, De Vriese and Harting, in their illustrated monograph of ferns, published at Leyden in 1853, describe it as "a succulent, tuberous, irregularly shaped mass, upon which the stems are articulated."

As no additional information is given in the more recent accessible work on ferns, 'Species Filicum,' of Hooker and Baker, I now add the following.

The rhizome or rootstock of the New-Zealand species is composed of an irregular agglomerated mass of thick fleshy scales, each scale being formed by the enlargement of a stipe-base, the stipe separating by an articulation above the swelling after the frond has performed its functions. The articulated surface of the scale shows a scar-mark much resembling the imprint of a horse-hoof. It is probable that the mobility of the stipe mentioned by Colenso takes place immediately before separation, after decay at the articulation has commenced; but I have not observed this.

Such a rootstock approaches the scaly bulb more in structure than a fern-rhizome, but without a central mass round which the scales might be arranged in order.

The continued addition of new scales outwards and upwards often raises the rhizome above the surface of the ground; but the frond-buds of those scales only which are in contact with the soil throw out independent roots. This form of rootstock may therefore be named a scaly subaerial rhizome without internodes.

The procedure in propagating *Marattia* by scales is very similar to that of the common potato. When the plant is grown from a detached scale, the buds may sprout from any part of its surface, differing in this respect from the potato in having neither points nor eyes; and when a frond-bud springs from the crown of the rhizome or from a scale above the surface of the ground, it derives its nourishment through the parent scales. The bud swells to a considerable size before the crozier bursts through the cuticular bark; during this process the latter is split and the edges carried upwards, forming the so-called adnate stipules of authors, and remains as a sharp ridge round the scar where the stipe articulated. The new stipe begins to swell at its base at a very early period, spreading over the adjacent surface and forming a new scale.

The growth of the *Marattia* rhizome is remarkably slow, being, under favourable circumstances, only one inch diameter in one year; and as the height is less than the diameter, it may be safely calculated that a Maori will consume in one day the growth of five years, which fact may account for this fern becoming rare in certain localities. The rhizome, by a process of renewal and movement, lives for an indefinite time, shifting its position in the ground by its growth outwards from a centre, the exhausted scales accumulating in a hard mass on the original site. In this way, as in certain fungi, rings or detached clumps may be formed at equal distances from the centre if no obstruction exists.

Before the exhaustion of any part of the rhizome mass, adventitious frond-buds may sprout from any part of its surface either above or below ground.

J Buchanan.

Fig. 5
Fig. 3
Fig. 4
Fig 6a
Fig. 2
Fig 7.
Fig. 1.
Fig. 6.

D. Blair lith.

M & N Hanhart imp

MARATTIA FRAXINEA.

I am also of opinion, although requiring longer observation to prove it satisfactorily, that the rhizomes of the New-Zealand *Botrychium* and *Ophioglossum* are built up, or added to, on a similar method to that of *Marattia.*

Note.—Since writing the above, I have been shown by Dr. Hector an old Maori vocabulary by the Rev. Richard Taylor, called 'A Leaf from the Natural History of New Zealand' (1848), where the author, under the name *Owipara,* gives the following:—"*edible fern, the root, which separates into* scales, *is eaten,*" showing that this peculiar structure had been noticed by Mr. Taylor twenty-eight years ago.

DESCRIPTION OF PLATE I.

Fig. 1. Front view of a scale, about one fourth natural size. It is composed of cellular tissue filled with starch-grains, fibro-vascular bundles, and covered by an adhering bark. The cut section shows numerous small orange-coloured spots, which exude on the surface, when newly cut, a viscid gum-resinous matter.

2. A scale after three months in the ground, showing the method of bud-growth with roots proceeding from the bottom of the bud. Rather under one fourth nat. size.

3, 4 are two illustrations of the frond-growth above ground, showing the croziers in two stages of development and the formation of the adnate stipule. Reduced to about one fourth nat. size.

5. Root-process, showing rootlets proceeding chiefly from the lower side of root; the whole very flexible. About one fourth nat. size.

6, 6*a*. Sections of root enlarged; the chief component mass is cellular tissue and starch-grains with lacunæ; there are also star-shaped nuclei of fibro-vascular and scalariform bundles, the bundles distinctly wedge-shaped, the root thus showing a stronger affinity in structure to the Equisetaceæ than to Ferns, and presenting an additional reason to the difference in Sporangia why Marattiaceæ should be separated from Ferns.

7. Starch-grains of *Marattia fraxinea,* Sm.

Note on Algæ collected by Dr. I. B. Balfour* at the Island of Rodriguez. By GEORGE DICKIE, M.D., F.L.S.

[Read February 15, 1877.]

THIS small collection of Algæ was made during the stay of the Transit-of-Venus Expedition in the island of Rodriguez in 1874. The short time devoted to the collection of marine forms accounts for its smallness. Of the 52 species and varieties herein enumemerated, 39 are marine, a number so small that it manifestly cannot be considered a fair representation of the marine alga flora. None of them calls for special mention, as all are widely spread in the Indian Ocean and tropical seas. The remaining 13 are freshwater forms. 6 of these have a general range throughout Europe, some being quite cosmopolitan. The rest are more restricted in distribution: 2 species, *Thorea violacea*, Bory, and *Cladophora hamosa*, Dickie, are peculiarly Mascarene; *Chantransia cærulescens*, Mont., is, strange to say, a Cayenne species; whilst *Conferva Ansonii*, Ag., and *C. moluccana*, Ag., are each confined to a single island in the Eastern archipelago; and there is an Indian species (*Cladophora Rœttleri*, Ktz.).

In addition to those enumerated in the list, fragments of others (such as *Vaucheria*, *Odontidium*, &c.) occur, but in too imperfect a condition for determination.

A survey of the freshwater algæ of Rodriguez shows us affinities with forms from all parts of the world; and while certain of the species are universally distributed, others are limited in their range; and of these I may note that none are African species, but they point mainly in an eastern and Asiatic direction.

List of Genera and Species.

Sargassum vulgare, Ag.
—— *ilicifolium*, Turner.
Turbinaria ornata, Turner.
Chroospora implexa, Hering.
Dictyota dichotoma, Huds.
Padina Pavonia, L.
Zonaria nigrescens, Sonder.
Asperococcus sinuosus, Roth.
Hydroclathrus cancellatus, Bory.
Mesogloia virescens, Carm.
Sphacelaria rigida, Hering.
Digenea simplex, Wulf.
Laurencia papillosa, Forsk.
—— *obtusa*, Hudson.
—— *flagellifera*, J. Ag.

---

* A fuller notice of this collection of Algæ will be published in the Roy. Soc. Gen. Report on the Venus-trans. Exped., which, however, may be less easy of access to cryptogamic botanists; hence the present excerpt.

Amphiroa fragilissima, L., var. *linearis.*
Lithothamnion mamillare, Harv.
Gracilaria corticata, J. Ag.
Hypnea hamulosa, Turner.
—— *Valentiæ*, Wulf.
Gelidium rigidum, Vahl.
Liagora viscida, Forsk.
Chylocladia rigens, Ag.
Caulerpa ericifolia, Ag.
—— *Boryana*, J. Ag.
—— *plumaris*, Vahl.
—— *mamillosa*, Mont.
Halimeda opuntia, Lamx.
—— *tuna*, Lamx.
Codium tomentosum, Stackh.
—— *adhærens*, Ag.
Valonia ægagropila, Ag.
Microdictyon Agardhianum, Dne.
Dictyosphæria favulosa, Dne.
Ulva latissima, L.
Enteromorpha intestinalis, Link.
—— *compressa*, Grev.
—— *ramulosa*, E. B.
Batrachospermum moniliforme, Ag., var. *æquinoctiale.*
Thorea violacea, Bory.
Conferva moluccana, Ag.
—— *bombycina*, Ag., var. *inæqualis*, Ktz.
—— *Ansonii*, Ag.
Cladophora Roettleri, Ktz.
—— *pannosa*, Dickie.
Chantransia cærulescens, Mont.
Œdogonium fonticola, A. Braun ?
Rhynchonema angulare, Hass.
Staurospermum capucinum, Bory ?
Lyngbya majuscula, Dillw.
Leptothrix lutea, Ktz.
Nostoc commune, Vauch.

Aspects of the Phænogamic Vegetation of Rodriguez, with Descriptions of new Plants from the Island.

By I. BAYLEY BALFOUR, D.Sc., F.L.S.

[Read February 1, 1877.]

(Abstract[*].)

As regards the history of its flora, the island of Rodriguez bears a striking resemblance to St. Helena. We read of the latter island that fire, goats, and finally introduced foreign plants well nigh exterminated the indigenous flora; and the same causes have operated and, I regret to say, are still operating in Rodriguez. The result is that the primitive vegetation has been in great part destroyed, leaving the island a field for the rank and rapid growth of common tropical weeds. The old and luxuriant vegetation of two hundred years ago—thus quaintly described by Leguat*, "We could hardly take our eyes off from the little mountains of which the island entirely consists; they are so richly spread with great and tall trees," and, again, "'Tis as I have hinted, composed of lovely hills covered all with fine trees whose perpetual verdure is entirely charming"—has now, to a large extent, disappeared, and is represented by only a few species, many of which are confined to the more unfrequented and less accessible places. It is indeed difficult to recognize in the barren and arid Rodriguez of the present day the "little Eden," "lovely isle," "earthly paradise" of Leguat.

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[*] A full and descriptive account of the botany of Rodriguez, amply illustrated, will hereafter be published by the Royal Society in their general Report of the Venus-transit Expedition to that island. But as a wish has been expressed by several botanists that I should give a *résumé* of some of the novelties among the flowering plants without further delay, I herewith, by permission, lay an abstract of a few of the more important points before the Linnean Society.

The flora, as it now exists, is an exceedingly fragmentary one; it is therefore a matter of some difficulty to determine its exact limits and to draw conclusions as to its affinities with the floras of other oceanic islands and of adjacent continents. This is the more to be regretted, as, from the geographical position of the island and the physical condition of climate to which it is subject, its flora might be expected, whether taken singly or as part of that of the Mascarene group, to contribute very important data towards the solution of the problem of the distribution of plant-life in that region. The following general statements may, however, be made:—

1. The flora is essentially insular.
2. The facies is tropical.
3. It is that of a dry rather than of a humid climate.
4. It is characteristically Mascarene, but possesses a fair amount of individuality.
5. It presents affinities with the floras of many other regions, most markedly with the African; but there are also some curious Polynesian and American relations, and strong Asiatic or eastern connexions.

The flora, as I found it, is composed of 470 species: of these, 297 are Phanerogams; the remainder (173) are Cryptogams. Of the 297 species of Phanerogams now growing on the island, considerably over one third have been introduced, and many of the remainder are widely spread weeds in the tropics of both hemispheres. In this number I include many plants which have escaped from, or are relics of, former cultivation, and ought perhaps to be expunged from the list; but I record their presence, as it is possible that, in time, many of them may occupy a more prominent position in the flora.

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* 'A New Voyage to the East Indies,' English translation. London, 1708.

The prevailing natural orders of the flowering plants are Leguminosæ, Convolvulaceæ, Solanaceæ, Malvaceæ, Compositæ, Euphorbiaceæ, Rubiaceæ, Cyperaceæ, Myrtaceæ, Liliaceæ, and Rutaceæ. All but the last three are, it will be observed, orders which, as a rule, compose a great part of the flora of any tropical islands reached by civilization. There are 35 endemic species of Phænogams, and 34 species which occur nowhere out of the Mascarene islands. The 35 peculiar species belong to 30 genera, and are included in 21 natural orders. Monocotyledons constitute six of these species, or about one sixth of the whole. Of the endemic species hitherto undescribed diagnoses are now given. Of the natural orders in which peculiar species occur, Rubiaceæ, which constitutes one thirtieth of the whole flora, is most largely represented in them, including 5 species belonging to as many genera. Altogether ten Rubiaceous plants are found in Rodriguez. Two of these are introduced—*Coffea arabica*, a relic of cultivation, and the common *Vangueria edulis*; and of the remaining 8, 3 (*Oldenlandia Sieberi*, *Fernelia buxifolia*, and *Antirrhœa frangulacea*) are Mascarene only; whilst 5 are peculiar, though 3 of them have representatives in other Mascarene islands.

Of 11 Compositæ, 3 species belonging to two genera are endemic, 2 belonging to *Psiaclia*, and the third is a species of the curious genus *Abrotanella*; and a fourth, a species of *Senecio*, is Mascarene.

Other Dicotyledonous orders containing peculiar plants are:—Myrtaceæ, including a peculiar *Eugenia*; Euphorbiaceæ, embracing a new *Euphorbia* and a *Phyllanthus* found by Commerson; Piperaceæ, represented by 3 new species of *Peperomia*; Rutaceæ, of which a *Zanthoxylon* occurs; Meliaceæ possessing a characteristic species of the Mascarene genus *Quivisia*; Turneraceæ, having a peculiar genus with Central-American affinities; Verbenaceæ, of which the Polynesian hitherto monotypic *Nesogenes* is represented by a new species, and there is also a *Clerodendron*; Asclepiadaceæ, comprising a new genus of Indian affinity and a new species of *Sarcostemma*; Anacardiaceæ, including a species of the African genus *Sclerocarya*; Ebenaceæ, with a new *Diospyros*; Nyctagineæ, containing a *Pisonia*; Amaranthaceæ, represented by an *Ærua*; and Urticaceæ by a *Pilea.*

The 6 peculiar Monocotyledons, included in 5 genera of 4 orders, are amongst the most interesting of Rodriguez plants, as amongst them occur those which may be considered physiognomic. These are the Pandanaceæ (Screw Pines), of which two species, both peculiar, occur. Three others are recorded, but on insufficient evidence. It is curious that the family, though in individuals far outstripping other families, is not rich in species.

The Palms are also peculiar, excluding *Cocos nucifera* and *Phœnix dactylifera,* of which but few individuals exist. There are three species, all of Mascarene genera—*Latania Verschaffeltii, Hyophorbe Verschaffeltii,* and *Dictyosperma alba,* var. *aurea.* The representation of these Palms in other islands of the group by cognate species is remarkable and worthy of notice. The Rodriguez species of *Latania* is represented in Mauritius by *L. Commersonii,* also found in Bourbon; and on Round Island a third species, *L. Loddigesii,* occurs. Again, *Hyopherbe Verschaffeltii,* peculiar to Rodriguez, is represented in Mauritius and Bourbon by *H. indica,* and on Round Island there is *H. amaricaulis.* *Dictyosperma alba,* on the other hand, is a very variable Palm, and occurs in all the islands of the group, but under a different form in each. In Rodriguez it assumes a singularly graceful and delicate character, constituting a very distinct variety long known to horticulturists in this country and in Europe as *Areca aurea.*

The paucity of Orchidaceæ is a very striking feature; but we find one new species and a distinct variety of another. This paucity is more remarkable as contrasted with the profusion of this family in the sister isles, the dryness of the island and absence of forest no doubt mainly contributing to this result.

Such is a brief indication of the endemic Phænogamic vegetation of Rodriguez; and the following is a list of the species. Those marked with an asterisk have been already described; of those not so marked a description follows.

Zanthoxylon paniculatum, *Balf. fil.*
Quivisia laciniata, *Balf. fil.*
Sclerocarya castanea, *Baker.*
Eugenia Balfourii, *Baker.*
*Mathurina penduliflora, *Balf. fil. in Linn. Soc. Journ.* xv. 159.
Danais corymbosa, *Balf. fil.*
Randia heterophylla, *Balf. fil.*
Pyrostria trilocularis, *Balf. fil.*
Scyphochlamys revoluta, *Balf. fil.*
Psychotria lanceolata, *Balf. fil.*
*Psiadia Coronopus, *Hk. et Benth. Gen. Pl.* ii. 285.
P. rodriguesiana, *Balf. fil.*
Abrotanella rhynchocarpa, *Balf. fil.*
Lobelia vagans, *Balf. fil.*
*Diospyros diversæfolia, *Hiern in Journ. Bot.* N. S. iv. p. 353, t. 172.
Tanulepis sphenophylla, *Balf. fil.*
Sarcostemma odontolepis, *Balf. fil.*
Hyprestes rodriguesiana, *Balf. fil.*
H. inconspicua, *Balf. fil.*
Nesogenes decumbens, *Balf. fil.*
Clerodendron laciniatum, *Balf. fil.*
Pisonia viscosa, *Balf. fil.*
Ærua congesta, *Balf. fil.*
Pilea Balfourii, *Baker.*
Peperomia hirta, *Balf. fil.*
P. reticulata, *Balf. fil.*
P. rodriguesii, *Balf. fil.*
Euphorbia daphnoides, *Balf. fil.*
*Phyllanthus dumetosus, Poir.; *DC. Prod.* xv. 2, 398.
Listrostachys aphrodite, *Balf. fil. et S. Moore.*
Aloë lomatopylloides, *Balf. fil.*
*Latania Verschaffeltii, *Ch. Lem. Ill. Hort.* 229.
*Hyophorbe Verschaffeltii, *Wendl. Ill. Hort.* 462.
Pandanus heterocarpus, *Balf. fil.*
P. tenuifolius, *Balf. fil.*

RUTACEÆ.

ZANTHOXYLON PANICULATUM, *Balf. fil.*, sp. nov.

Arborea; ramulis validis teretibus, spinis paucis, nigrescentibus, uncinatis, arcuatis; foliis imparipinnatis 15–19, foliolatis, ad apicem ramulorum confertis, breviter petiolatis; foliolis oppositis sessilibus subcordato-oblongis, obtusis, basis inæqualiter cordatis, glabris, subcoriaceis, supra nitidis, subtus pallidioribus, costa venisque prominentibus; paniculis subsessilibus, patentibus, folio brevioribus, ramis puberulis, pedicellis brevibus; flor. ign.; capsula globosa, bivalvi, glabra, valide minuteque tuberculata, breviter stipitata; sem. ign.

Hab. in ripis fluvii Quitore prope ejus ostium. Nom. vulg. Bois Pasner.

A small tree of which only two or three specimens were seen in the locality named. Is not far removed from the Indian species *Z. Budrunga*, Wall. Hk. fil. Flor. Ind. iv. i. 495.

MELIACEÆ.

QUIVISIA LACINIATA, *Balf. fil.*, sp. nov.

Frutex glaber ramosissimus; foliis oppositis v. subopposítis, subsessilibus, adultis obovato-cuneatis, obtusis v. retusis, integris, junioribus alte pinnatifidis 3–5-lobatis in formam adultam gradatim transeuntibus, nitidis, rigide coriaceis, reticulato-venulosis; floribus in cymas axillares bifloras brevissime pedunculatas collectis, pedicellis brevibus validisque erectis v. suberectis; calyce cotyliformi, minute 4-dentato, strigoso, dentibus deltoideis; petalis 4 oblongo-ellipticis obtusis, patentibus; staminibus 8, tubo brevi; ovario dense strigoso; styli apice subito incrassato ibique strigoso et constricto; stigmate capitato leviter umbilicato, obscure 4-lobato, lævi.

Hab. In insula late dispersa. Nom. vulg. Bois Balais.

A heterophyllous species distinguished from the Mauritian *Q. filipes*, Baker, Fl. Maur. Seych. p. 46, by its heterophylly, stout floral pedicels, and larger flowers.

ANACARDIACEÆ.

SCLEROCARYA CASTANEA, *Baker, Fl. Maur. Seych.* p. 63.

Arborea, ramulis validissimis teretibus; foliis 7–11, imparipinnatis, foliolatis, ad apicem ramulorum confertis, petiolatis; foliolis oppositis sessilibus rarius brevissime petiolulatis, oblongis v. ovatis, acutis v. breviter acuminatis, basi inæqualiter rotundatis, obscure crenulatis, submembranaceis, supra nitidis glabrisque, subtus medio nervo subhirsuto; floribus dioicis (?), breviter pedicellatis in racemis brevibus sessilibus v. breviter pedunculatis solitariis in axillis foliorum terminalium dense confertis; ♀ sepalis 5 minutis rotundatis ciliatis; pe-

talis 5, oblongis obtusis reflexis imbricatis; disco crenate 10-lobato; staminibus 10 partim anantheris; ovario oblongo, glabro, stylis 5 validis, distantibus, brevibus, erectis divaricatis, sub apicem ovarii sitis; stigmatibus capitatis, spongiosis; ovulis solitariis pendulis; fruct. ign.

Hab. in vallibus prope fontes fluminum Palmiste et Mouruc.

A rare species, differing in its symmetry and crenated disk from the published description of *Sclerocarya.* It approaches the monotypic Cape genus *Harpephyllum*, Benth. & Hook. fil. Gen. Plant. i. 427, which is unfortunately imperfectly known. It may be a connecting link between these genera.

MYRTACEÆ.

EUGENIA BALFOURII, *Baker, Fl. Maur. Seych.* p. 116.

Arborea, ramosissima, ramulis glabris tetragonis; foliis breviter petiolatis oblongis v. ovali-oblongis v. oblanceolatis acutis, basi cuneatis, glabris, rigide subcoriaceis, pellucido punctatis, penninerviis, nervis tenuibus plurimis arcte positis; paniculis longe pedunculatis paucifloris axillaribus folia æquantibus glabris late patentibus; floribus sessilibus v. brevissime pedicellatis; calyce obscure dentato, dentibus deltoideis.

Hab. in valle fluvii Baleine prope fontem.

An uncommon plant having some affinity with the Bourbon *E. paniculata*, Lam. Dict. iii. 199, = *Syzygium paniculatum*, DC. Prod. iii. 259.

RUBIACEÆ.

DANAIS CORYMBOSA, *Balf. fil.*, sp. nov.

Herba scandens volubilisve, ramulis tenuibus, glabris, tetragonis; foliis oppositis breviter petiolatis oblongis v. lanceolatis acutis v. acuminatis, basi cuneatis, integris, glabris, subcoriaceis, reticulato-venulosis, subtus pallidis; stipulis minutis; cymis corymbosis axillaribus in axillis foliorum terminalium densifloris breviter pedunculatis; pedicellis erectis tenuibus brevibus; bracteolis minutissimis; calyce 5-dentato, tubo campanulato, dentibus lanceolatis; corolla hypocrateriformi, segmentis oblongo-spathulatis, acutis, patentibus, quam tubus dimidio brevioribus, fauce dense villosa; staminibus florum brevistylium longe exsertis; stylo furcato, tubum corollæ æquante, ramulis teretibus clavatis; capsula globosa, glabra.

Hab. In declivibus montis "Grande Montagne" sparse lecta.

Distinguished by its leaves and inflorescence from the Mascarene

D. fragrans, Comm. (Cordem. in Adans. x. 357), to which the species mentioned in DC. Prod. iv. 361 are reducible.

RANDIA HETEROPHYLLA, *Balf. fil.*, sp. nov.

Suffrutex glaber, ramulis tetragonis; foliis oppositis breviter petiolatis, adultis oblongis v. ellipticis, obtusis, mucronatis v. emarginatis, ad extremitatem utramque rotundatis, sæpe lanceolatis et versus extremitates attenuatis, rigide coriaceis, glabris, supra nitidis; foliis juvenilibus lineari-lanceolatis elongatis, acutis, hispidulis, gradatim in formam adultam transeuntibus; stipalis brevibus, connatis, subtruncatis; cymis solitariis, extraaxillaribus, patentibus, 1–5 floris, pedunculis glabris, petiolum longe excedentibus, bracteolis fere obsoletis; floribus sessilibus v. brevissime pedicellatis, erectis; calyce anguste infundibuliformi, minute 5-dentato; corolla hypocrateriformi, fauce breviter villosa, segmentis lanceolatis. Antheris partim exsertis, ligulatis, acutis; ovario 5-gono; fructu ovoideo oblongo 5-angulato.

Hab. in locis seclusis insulæ. Nom. vulg. Café Marron.

A remarkable heterophyllous species of a genus hitherto unknown in the Mascarene Islands.

PYROSTRIA TRILOCULARIS, *Balf. fil.*, sp. nov.

Frutex glaber, ramosus, ramulis tetragonis; foliis adultis breviter petiolatis, oblongo-ovalibus v. oblongis v. fere obovatis acutis, juvenilibus subsessilibus, linearibus, mucronatis, rigide coriaceis, marginibus leviter revolutis, glabris, nitidis, penninerviis, subtus costa prominente; stipulis connatis, deciduis, longe cuspidatis, glabris; floribus axillaribus, cæt. ign.; fructu breviter stipitato, 3- rarius 2-loculari, globoso, subtrigono.

Hab. In insula late dispersa. Nom. vulg. Bois Chauve-Souris.

A heterophyllous plant (provisionally referred to the genus *Pyrostria*) of which the seed is as yet unknown.

The plant was obtained only in fruit; and there is therefore some difficulty in determining its exact position.

SCYPHOCHLAMYS, gen. nov.

Calycis tubus campanulatus; limbus truncatus v. obscure 4-lobatus, coriaceus, persistens. *Corolla* infundibularis, tubo brevi, fauce villosa; limbi lobi 4–5 (6 ?), lanceolato-triquetri, acuti, incrassati, valvati. *Stamina* 4-5 (6 ?), ori corollæ inserta, filamentis brevibus; antheræ dorso infra medium affixæ, vix exsertæ, lanceolato-acutæ. *Discus* annularis v. pulvinaris. *Ovarium* 4–5- (6- ?) loculare; stylus validus, profunde 4-fidus; ovula in loculis solitaria, infra apicem loculi pendula. *Fructus* pyriformis, costatus. . . . (maturum non vidi). *Semina* pendula, non compressa.—Arbores parvæ, glaberrimæ, ramulis subtetragonis. *Folia* opposita, breviter petiolata, rigide coriacea, penninervia. *Stipulæ* interpetiolares, latæ, connatæ, coriaceæ, persistentes. *Flores* in capitulum 6–12-florum densum pedunculatum congesti; capitula intra bracteas duas oppositas conniventes crasse coriaceas persistentes in involucrum cyathiforme connatas inclusa.

Monotypic and endemic.

S. REVOLUTA, sp. unica.

Arbor parva, ramosa; foliis heteromorphicis, adultis breviter petiolatis ellipticis v. late ovato-oblongis nitidis venulosis, marginibus revolutis $3\frac{1}{2}$–4 poll. longis $1\frac{1}{2}$–$2\frac{1}{2}$ poll. latis (petiolo excluso $\frac{1}{6}$–$\frac{1}{4}$ poll. longo), juvenilibus linearibus 4–6 poll. longis, $\frac{1}{8}$ poll. latis; stipulis $\frac{1}{3}$ poll. longis; capitulis solitariis, axillaribus, erecto-patentibus, pedunculis petiolum excedentibus, $\frac{1}{3}$–$\frac{5}{12}$ poll. longis; involucro $\frac{1}{2}$ poll. diam. basi, intus tuberculis appressis brevibus teretibus linearibus dense vestito; corolla $\frac{1}{4}$ poll. longa, calyce triplo longiore; fructu in singulo involucro solitario.

Hab. In insula dispersa. Nom. vulg. Bois Mangue.

A near congener of *Pyrostria*. Remarkable for the large two-leaved persistent involucre embracing and enclosing the flowers, and also for its heteromorphic leaves.

PSYCHOTRIA? LANCEOLATA, *Balf. fil.*, sp. n.

Frutex glaber; ramulis tetragonis; foliis oppositis lanceolatis acutis inferne in petiolum brevem gradatim attenuatis, coriaceis; stipulis deciduis; floribus in paniculam corymbosam pedunculatam, ebracteatam v. minutissime bracteatam, in axillis foliorum superiorum congestis, minutis, breviter pedicellatis; calyce late cupuliformi truncato obscure 5-dentato; corolla subcampanulata lobis lanceolatis incrassatis tubo brevioribus, fauce dense pilosa; antheris dorso affixis, filamentis brevibus; disco magno; ovario 2-loculari; ovulo solitario in singulo loculo, erecto, basilari, oblongo-ovato compresso; stylo furcato, ramis brevibus; fruct. ign.

Hab. In declivibus montis "Grande Montagne" infrequens. Nom. vulg. Bois Lubine.

The specimens I obtained of this are very imperfect, and a final determination is impossible. Its position, therefore, in this genus is provisional.

COMPOSITÆ.

PSIADIA RODRIGUESIANA, *Balf. fil.*, sp. n.

Suffrutex, ramulis teretibus pubescentibus; foliis lanceolatis, acutis, superne profunde serratis, inferne cuneatis integrisque et in petiolum pilosum brevem attenuatis, dense pilosis, nervo centrali subtus prominente nervos 5–7 adscendentes parallelos subtus prominulos emittente; capitulis breviter pedunculatis in corymbos laxos axillares patentes dispositis; bracteis involucri glabri interioribus lanceolatis v. oblongis acutis margine submembranaceis, exterioribus brevioribus post anthesin patentibus; achæniis compressis angulatis, rugis calvis, inter rugas strigosis; pappo rigido, setoso, scabriusculo.

Hab. in locis excelsis non frequens. Nom. vulg. Bois de Ronde.

A rare shrub, quite distinct from the Mauritian species of *Psiadia*, resembling more nearly the Bourbon plants originally described under the generic name *Conyza*.

ABROTANELLA RHYNCHOCARPA, *Balf. fil.*, sp. n.

Herba pusilla, pulvinata, glabra, caulibus dense confertis; foliis imbricatis, stellatim patentibus, recurvatis, late amplexicaulibus, lyrate pinnatifidis v. pinnatipartitis, rarius simplicibus spathulatisque, acutis, coriaceis, uninerviis, nervo prominente; capitulis solitariis sessilibus, singulo 6–10-floro; involucro 6-phyllo, bracteis ciliatis, exterioribus plurinerviis latioribus, interioribus 2–3-nerviis angustioribus; receptaculo foveolato; floribus exterioribus femineis, interioribus hermaphroditis fertilibus; femineis corolla 3-dentata, basi globosa, stylo exserto breviter bifido; hermaphroditis corolla 4-dentata, antheris inclusis ovoideis acutis inappendiculatis, stylo valido, tubo corollæ subæquilongo, alte bifido, ramis ciliatis; achæniis obovatis, compressis, calvis, lente curvis, obscure 4–5-angulatis, apice in rostrum primum tortum, demum rectum elongato.

Hab. In terra calcarea juxta oram maritimam solum crescit.

A very distinct species of this curious South-Temperate-American and Australian genus hitherto unknown as Mascarene.

CAMPANULACEÆ.

LOBELIA VAGANS, *Balf. fil.*, sp. n.

Annua; caulibus repentibus tenuibus glabris; foliis membranaceis, inferioribus ovato-lanceolatis v. elliptico-ovato-acutis v. obovatis, basi cuneatis, superne crenatis, inferne integris, breviter petiolatis, superioribus linearibus acutis v. obtusis, retusis v. submucronatis, subsessilibus, crenato-serratis; floribus solitariis in axillis foliorum superiorum, pedicellatis; pedicellis bractea brevioribus; calycis tubo obconico lacinias subulatas subæquante v. breviter excedente; corollæ tubo calycis lobis quadruplo longiore, lobo inferiore obovato-oblongo acuto, superiore lineari; antheris 2 inferioribus apice barbatis, superioribus pilosiusculis; stylo longo; stigmate bilobato; capsula obovoidea.

Hab. in vallibus umbrosis prope fluminum fontes.

Distinguished from the nearly allied Mauritian *L. serpens*, Lam. (DC. Prod. vii. 368), and *L. filiformis*, Lam. (DC. *l. c.*), by its broader leaves and larger flowers.

ASCLEPIADACEÆ.

TANULEPIS, gen. nov.

Calyx minutus, 5-partitus, basi intus 5-glandulosus. *Corolla* subrotata, alte 5-fida, subvalvata; coronæ squamæ 5-lineari-lanceolatæ elongatæ, petalis subæquilongæ, antheras breviter excedentes, subincrassatæ, basi connatæ gynostegioque adhærentes. *Stamina* filamentis latis brevibusque basi annulo coronæ affixa. *Antheræ* apice cuspidatæ, conniventes; pollen granulosum in quoque loculo in massas duas subcohærens, appendicibus latis, orbicularibus corpusculorum longe stipitatorum applicitum. *Stigma* 5-gonum? *Folliculi* divaricati, tenues, subteretes, subcostati. *Semina* comosa.—Suffrutex volubilis, glaber. *Folia* opposita nitidula. *Cymæ* laxe ramosæ ad apices ramorum breviter pedunculatæ. *Flores* parvi, pedicellati. Bracteæ minutissimæ.

Monotypic and endemic.

T. SPHENOPHYLLA, sp. unica.

Caulibus tenuibus; foliis membranaceis breviter petiolatis, lanceolatis acuminatis v. oblanceolatis basi cuneatis $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longis (petiolo excluso $\frac{3}{8}$ poll.), $\frac{1}{3}$–$\frac{1}{2}$ poll. latis, integris, nitidis, subtus pallidioribus penninerviis; cymis paucifloris, pedunculis $\frac{1}{18}$ poll. longis, bracteis deciduis, pedicellis $\frac{1}{3}$–$\frac{1}{2}$ poll. longis; corollæ lobis $\frac{1}{8}$ poll. longis; stipite corpusculorum appendicem duplo excedente; folliculis fusconigris, glabris 2–3 poll. longis, $\frac{1}{12}$–$\frac{1}{8}$ poll. latis; seminibus compressis $\frac{1}{8}$ poll. longis, latere bisulcatis.

Hab. Per insulam totam crescens.

With the monotypic East-Indian genus *Brachylepis*, W. & A. (Benth. et Hook. fil. Gen. Plant. ii. 742), it has many points of resemblance; but the elongated outer scales of the corona and their mode of attachment, as well as the character of the inflorescence, distinguish it.

SARCOSTEMMA ODONTOLEPIS, *Balf. fil.*, sp. n.

Planta aphylla scandens v. decumbens, caulibus teretibus glabris carnosis ad nodos articulatis ibique squamis minutis oppositis in loco foliorum instructis; umbellis solitariis ad nodos sessilibus breviterve pedunculatis v. terminalibus. Receptaculo paleis vestito; floribus breviter pedicellatis; calycis segmentis ovatis v. suborbicularibus concavis margine ciliatis, extus puberulis; corolla altelo bata, laciniis oblongo-ellipticis glabris; corona exteriore corollæ adnata, alte 5-partita, lobis tridentatis singulo squamæ interiori adhærente, dente centrali maximo; interiore exteriorem triplo excedente, segmentis superne saccatis, dolabriformibus, gynostegio subæquilongis; stigmate apiculato, obscure bilobato, umbilicato.

Hab. in insula late dispersa. Nom. vulg. Liane Calé.

Probably merely a variety of *S. viminale*, R. Br. (DC. Prod. viii. 538), from which the only point of difference is the deeply 5-partite outer corona. I have seen one flower in which there was an arrangement of the corona exactly halfway between the two forms.

ACANTHACEÆ.

HYPOËSTES RODRIGUESIANA, *Balf. fil.*, sp. n.

Herba parva ramosissima glabra, ramis crassis lignosis; foliis longe petiolatis ovato-lanceolatis, inferne deltoideis, integris, subcoriaceis, substrigulosis; racemis breviter pedunculatis in axillis foliorum confertis, bracteis obovatis v. oblanceolatis capitula uniflora opposita arcte disposita gerentibus; involucro tubuloso, subventricoso, tetraphyllo, ad medium discreto, lobis inæqualibus, exterioribus longioribus, ovato-acutis, extus plaga lineari lateraliter notatis, interioribus lanceolatis brevioribus; calyce brevi extus hispidulo, laciniis tubo brevioribus, ciliatis; corolla alte bifida, pilosa, labiis tubo subæquilongis, superiore oblongo, inferiore tridentato v. trifido; staminibus et filamentis exsertis; ovario oblongo, compresso, glabro; stylo filiformi, exserto.

Hab. in locis excelsis montis Malartic, sparse dispersa.

A dwarfed plant allied to *H. Bojerianum*, DC. Prod. xi. 506, of Madagascar.

H. INCONSPICUA, *Balf. fil.*, sp. n.

Herba tenuis, caule repente valde articulato, ad nodos radicante; foliis oppositis distantibus ovalibus v. obovatis, obtusis v. subacutis, strigosis integris, inferne in petiolum subæquilongum longiorem attenuatis; capitulis solitariis axillaribus subsessilibus, bracteis nullis; involucro unifloro strigoso tetraphyllo, laciniis lineari-lanceolatis inæqualibusque ad medium connatis, exterioribus dimidio longioribus; calyce brevissimo lobis lanceolatis acuminatis, involucro multo breviore; corolla involucro longiore: cæt. ign.

Hab. In solo calcareo a litore remoto secus extremitatem occidentalem insulæ sparse crescit.

An ally of *H. serpens*, R. Br.; DC. Prod. xi. 501. A Mauritian plant, which has larger leaves and glabrous involucres.

VERBENACEÆ.

NESOGENES DECUMBENS, *Balf. fil.*, sp. nov.

Herba perennis diffusa, ramis laxis oppositis v. suboppositis, teretibus, tenuibus, divaricatis humifusis, glabris sed versus extremitatem biseriatim pilosis; foliis oppositis lanceolatis v. rhomboideis, acutis, integris, margine ciliatis, inferne in petiolum brevem attenuatis, siccitate non nigrescentibus; floribus in 1–2-floras cymas axillares dispositis; pedicellis brevissimis pubescentibus; calyce amplo $\frac{1}{4}$ poll. longo, alte 5-dentato, dentibus acutissimis, crenatis, extus intusque glandulosis; corollæ lobis subæqualibus rotundatis, tubo quintuplo v. sextuplo brevioribus; antheris oblongis; fructu lævi compresso, apice hispido, basi glabro, stylo mucronato, calyce cincto.

Hab. In solo calcareo secus extremitatem occidentalem insulæ loco singulo reperta.

An interesting species of a hitherto monotypic Polynesian genus.

CLERODENDRON LACINIATUM, *Balf. fil.*, sp. nov.

Frutex v. arbor parva; foliis oppositis petiolatis, coriaceo-membranaceis poroso-punctatis, adultis ovatis v. ovato-oblongis, acutis basi subdeltoideis, integris, glabris, subtus pallidis, juvenilibus filiformiter tripinnatipartitis, segmentis distantibus puberulis ligulatis obtusis per formas intermedias in adultam transeuntibus; cymis axillaribus breviter pedunculatis, paucifloris, bis trifidis, patentibus, bracteolis minutissimis; calyce cupuliformi truncato, ore integro v. obscure lobato glabro, demum patulo; corolla infundibuliformi, calycem sextuplo excedente, tubo intus resinoso-papillato, laciniis obtusis tubo brevioribus, genitalibus breviter exsertis.

Hab. In insula late diffusum. Nom. vulg. Bois Cabri.

C. heterophyllum, R. Br. (DC. Prod. xi. 660), of Mauritius, is a near ally, but differs in the character of its heterophylly and in the flowers.

NYCTAGINACEÆ.

PISONIA VISCOSA, *Balf. fil.*, sp. nov.

Arbor non armata, foliis petiolatis ovatis v. obovatis, obtusis v. acutis, v. breviter cuspidatis, basi deltoideis, subrepandis, membranaceis, primo subpuberulis demum scabrulis, siccitate nigrescentibus; petiolo tenui. ♂ panicula corymbosa in axillis foliorum terminalium oriente, brunneo-pubescente, densa; pedunculo compresso, bracteolis minutis deciduis; perianthio infundibuliformi extus piloso, breviter 5-dentato, dentibus reflexis; staminibus 13 exsertis. ♀ panicula laxe lateque patente, pedicellis erecto-patentibus; perigonio elongato, 5-angulato, angulo singulo brevibus uncinatis glandulosis tuberculis seriatim instructo.

Hab. In littore crescit. In insula Frigate frequenter, sed in Rodriguez rarius invenitur. Nom. vulg. Bois Mapou.

The bristly fruit completely filled by the seed, amongst other characters, distinguishes this from *P. ovalifolia*, DC. Prod. xiii. 2, 441, a Mauritian species, of which probably *P. lanceolata*, DC. Prod. xiii. 2, 442, is a variety.

AMARANTHACEÆ.

ÆRUA CONGESTA, *Balf. fil.*, sp. nov.

Herba perennis, dense cæspitosa, ramosissima, pulvinata, ramis firmis, lignosis, humifusis; foliis alternis, petiolatis, obovato-spathulatis, obtusis v. acutis, subcoriaceis, glabris, junioribus subtus pilosis; spicis in axillis villosis foliorum superiorum sessilibus, solitariis, oblongis v. subrotundatis erectis; bracteolis deltoideis perianthio brevioribus, glabris; perianthii segmentis oblongo-lanceolatis uninerviis, exterioribus duobus latioribus pilosiusculis, interioribus tribus angustioribus denseque pilosis; staminodiis minutissimis, antheris rotundatis; utriculo compresso suborbiculari glabro; semine inæqualiter reniformi, minute tuberculato, margine obtuso.

Hab. In terra calcarea solum crescit.

A very distinct species, unlike any other Mascarene.

URTICACEÆ.

PILEA BALFOURII, *Baker, Fl. Maur. et Seych.* p. 276.

Herba parvula monoica perennis glaberrima, caule brevi 4-gono, basi cæspitose ramoso, ramis patentibus oppositis exsiccatis cystolithiferis; stipulis deltoideis minutissimis; foliis oblanceolato-rhomboideis acutis v. acuminatis, basi cuneatis, superne alte inciso-crenatis, inferne integris triplinerviis, nervis usque ad apicem productis, lamina exsiccata membranacea, paginis utrisque cystolithis linearibus suffultis; cymis patentibus, multifloris, breviter pedunculatis, axillaribus, petiolo brevioribus; floribus breviter pedicellatis; ♂ perianthio bilobato, lobis concavis, subcucullatis, acutis; ♀ achæniis lævibus, acute marginatis, compressis, ovoideis, vix segmentum intermedium perigonii superantibus.

Hab. in locis humidis umbrosisque in vallibus prope fontes fluminum.

Distinguished from the nearly allied Mauritian *P. cuneiformis*, Wedd. (DC. Prod. xvi. 133), by the habit, spreading inflorescence, and long petiolate leaves.

PIPERACEÆ.

PEPEROMIA HIRTA, *Balf. fil.*, sp. nov.

Herba repens, pilosus, caule simplici v. ramoso e nodis radicante; foliis oppositis petiolatis ellipticis v. oblongo-ellipticis v. obovatis, 5-nerviis, utrinque villosis, nervulo obscuro juxta marginem currente, petiolo villoso; cæt. ign.

Hab. In locis siccis scopulosisque sparse crescit.

The Mauritian species *P. elliptica*, Dietr. (DC. Prod. xvi. 440), is the nearest ally; but its non-pilose character sufficiently separates it.

P. RETICULATA, *Balf. fil.*, sp. nov.

Herba carnosa repens, caule simplici v. uniramoso, in parte inferiore e nodis radicante, versus apicem adscendente; foliis oppositis, petiolatis, summis ternis, elliptico-rhomboideis, apice emarginulatis v. acutis, utrinque glabris 5-nerviis et reticulato-venulosis, nervulo obscuro juxta marginem currente; amentis solitariis axillaribus, breviter pedunculatis, folia terminalia superantibus, bracteis subrotundatis peltatis breviter stipitatis; ovario globoso immerso; stigmate umbilicato prominente, glabro.

Hab. in locis excelsis umbrosisque insulæ.

A species nearly allied to the Indian *P. dindygulensis*, Miq. (DC. Prod. xvi. 442) but distinguished by its glabrous shortly petiolate leaves.

P. RODRIGUESIANA, *Balf. fil.*, sp. nov.

Herba repens ramosissima carnosa, caulibus ad nodos radicantibus subpilosis; foliis oppositis petiolatis obovato-ellipticis, basi cuneatis obtusis, utrinque glabris, ciliolatis, subtus albido-pallidis subtiliter 3–5-nerviis, enervulosis, petiolo piloso; cæt. ign.

Hab. In locis umbrosis sparse crescit.

Has a close affinity with *P. Ventenatii*, Miq. (DC. Prod. xiv. 446), an East-Indian species.

EUPHORBIACEÆ.

EUPHORBIA DAPHNOIDES, *Balf. fil.*, sp. nov.

Suffrutex, caule tenui, ramulis lignosis teretibus; foliis ad apicem ramulorum confertis, breviter petiolatis, oblanceolatis, obtusis, mucronatis, tenuiter coriaceis, glabris, cito deciduis, exstipulatis; cymis terminalibus, pedunculatis, bracteis 2 magnis coriaceis ovalibus v. suborbicularibus mucronatis, v. retusis v. emarginatis; involucris campanulatis breviter pedicellatis glabris, lobis brevibus, glandulis 5 rubris rotundatis v. lunatis poroso-punctatis integris; stylo brevi; capsula glabra depressa trisulcata, transverso diametro majore, coccis paulum compressis, seminibus ovoideis irregulariter papillatis glabris.

Hab. in valle "Riviere de l'Est" solum.

A very distinct species.

ALOË LOMATOPHYLLOIDES, *Balf. fil.*, sp. n.

Subacaulescens, foliis stellatim patentibus ensiformibus, versus apicem gradatim attenuatis, acutis, dentibus deltoideis paulum incurvatis subrigidis armatis, carnosis, subtus convexis, supra concavis, paginis lævibus, atroviridibus; scapo ramoso, striato, compresso, inferne subalato, alis obscure dentatis, ramulis 2–3 adscendentibus racemos densos gerentibus; bracteis lanceolatis membranaceis; floribus breviter pedicellatis; perianthio obclavato, segmentis lanceolatis, tubum oblongum rectum dilatatumque dimidio superantibus; staminibus perianthio subæquilongis, filamentis membranaceis alatis, basi dilatatis; capsula angulari ovoidea.

Hab. In insula late diffusa. Nom. vulg. Ananas Marron.

PANDANACEÆ.

PANDANUS HETEROCARPUS, *Balf. fil.*, sp. n.

Arbor ramosa, caudice lævi, radicibus aëreis plurimis, ramis patentibus; foliis lanceolato-acuminatis, basi amplexicaulibus dilatatis, erecto-patentibus coriaceis strictis viridescentibus, basi sæpe glaucescentibus subplanis, marginibus per totum costaque subtus a medio distanter rubro-spinosis spinulis subincurvatis; ♀ capitulis solitariis globosis subdepressis v. elliptico-oblongis, nunc longe nunc breviter pedunculatis, pendulosis v. inclinatis, spathis pluribus brevibus deciduis; drupis 2–5-locularibus obpyramidalibus non compressis 5–6-gonis, fere per totum coadunatis, apice breviter pyramidali, rarissime convexo sæpius applanato v. umbilicato, distincte 5–6-angulato, areola centrali stigmata plana sessilia reniformia suberosa cingente.

Hab. Per insulam totam late dispersus. Nom. vulg. Vacoa Calé rouge; V. Calé blanc; V. Sac; V. Poteau; V. Parasol.

A very variable species, approaching *P. utilis*, Bory, Voy. ii. 2, but distinguished by habit, and by its drupes with wide and flattened summits.

P. TENUIFOLIUS, *Balf. fil.*, sp. n.

Arbor parva, caudice lævi, radicibus aëreis paucis, ramis erectis crassis; foliis anguste lineari-lanceolatis acuminatissimis, apice subflagellatis, basi dilatatis lateque amplexicaulibus, coriaceis recurvatis pendulisque, subplanis, atroviridibus, saepe basi dealbatis, marginibus subincrassatis, per totum costaque a medio rubrospinosis, spinis brevibus acutis, incurvatis, adscendentibus; capitulis solitariis pendulosis, pedunculo curvato, paucidrupatis, subglobosis; spathis pluribus, deciduis; drupis subpyriformibus, 2–5-locularibus non-compressis, usque ad $\frac{2}{3}$–$\frac{3}{4}$ a basi coadunatis, parte conjuncta 5–6-gona obpyramidali, apice libero rubiginoso rotundato umbraculiformi obscure 5–6-angulato, vertice applanato v. depresso, areola marginata stigmata plana sessilia reniformia cingente.

Hab. In vallibus montibusque a litore remotis crescit. Nom. vulg. Vacoa Chevron.

A species belonging to the *Utilis* group, and by some (perhaps hybrid) forms approaching very near *P. heterocarpus*, but easily distinguished when typical by habit, the narrow drooping leaves, and the large drupes with rounded apices.

A very marked feature in the Rodriguez flora, and one worthy of special notice, is the variability in size, form, and habit exhibited by the leaves of many plants at different stages of growth. The variation is confined almost absolutely to small trees and shrubby plants, occurring in seventeen species, all of which are either endemic or Mascarene, one only extending into Africa. The young plant, in these heterophyllous species, produces leaves of a lower stage of development than the adult; and as the individual grows older the leaves successively developed are more like those of the mature tree, until at a certain age only the form of leaf typical of the adult is produced. But in an adult plant, should any adventitious shoots be given off from the stem below its first branching, these have the juvenile, not the adult form. The heteromorphism varies greatly in degree and kind; but each species presents variations always of the same kind. Whether all the species of the same genus on the island exhibit, when they vary, the same type of heterophylly, I had no opportunity of determining; certainly representative species in the adjacent islands do not always do so. The phenomenon is confined to no special family; but it is worthy of note that of Rubiaceæ no less than four species exhibit it.

We may best understand the variations in size and form by considering that there are three types of variations.

In the first the difference between the leaves of the young and the adult is mainly one of size, the relative proportion of length and breadth of lamina being the same in both; and in each the margins of the lamina are usually entire. Sometimes the parenchyma is deficient at the margin in the juvenile, so that it is slightly spiny, this character gradually disappearing in the adult. This kind of heterophylly is observed in three species—*Ludia sessiliflora*, *Fernelia buxifolia*, *Carissa Xylopicron*.

The second kind of variation results from the non-development in breadth of the leaves of the young plant, usually accompanied by a great increase in length, the relative proportion of length to breadth of lamina being vastly different in the juvenile form from what it is in the adult. The lamina is entire, developing equally, though toothings characteristic of the adult may be seen; but it is never lobed or cleft. The leaves in the young plant are thus more or less linear or lanceolate, and, as a rule, greatly exceed the adult in length, being sometimes twice or thrice as long. This is the commonest kind of variation, occurring in nine species, viz. *Dombeya ferruginea*, *Elæodendron orientale*, *Terminalia Benzoin*, *Fœtidia mauritiana*, *Mathurina penduliflora*, *Randia heterophylla*, *Pyrostria trilocularis*, *Scyphochlamys revoluta*, and *Diospyros diversifolia*. Only in *Pyrostria trilocularis* and *Diospyros diversifolia* the linear juvenile leaves do not greatly exceed the adult in length. Probably *Eugenia cotinifolia* is also heterophyllous after this type.

In four species the third type of heteromorphism is seen. Here the lamina in the leaves of the young plants develops unequally, and thus a lobed or cleft leaf is formed; but the relative proportion of length to breadth of lamina is the same in both juvenile and adult. The amount of lobation in the juvenile leaves varies; they may be even twice or thrice cleft; and according as the leaf is pinnately or radiately veined, the leaf is pinnatifid, or palmatifid. The species in which this type is seen are *Aphloia mauritiana*, *Hibiscus liliiflorus*, *Quivisia laciniata*, and *Clerodendron laciniatum*. In *Hibiscus liliiflorus* the palmatifid form occurs; the other three are pinnatifid. In *Abrotanella rhyncocarpa*, a small Composite herb, the leaves as they get older tend to become pinnatifid, the young being quite entire. Its variation, then, is the converse of this third type.

In addition to the alteration in form, there is often a difference between the habit and consistence of the leaves in the juvenile and adult plants. *Dombeya ferruginea* shows this very well. Its green glabrous juvenile leaves are, in the adult, clothed on the under surface with a dense brown tomentum. The converse is sometimes seen, for instance in *Randia heterophylla*, where pubescent juvenile leaves become glabrous in the adult. As to consistence, the hard rigid young leaves of *Ludia sessiliflora* and *Carissa Xylopicron* become in the male more flaccid and coriaceous.

It is curious that *Hibiscus* (*Paritium*) *liliaceus* is not heterophyllous in Rodriguez, though it is recorded as being so on the coast of Africa; and this is the more remarkable if, as Mr. Dyer suggests (Linn. Soc. Journ. xv. 83), *H. tricuspis* is merely an insular form of this plant.

The Tropical Ferns collected by Professor Steere in the years 1870–75. By M. W. Harrington, M.A., F.L.S., Assistant Professor of Botany, University of Michigan.

[Read March 1, 1877.]

In the following list the American ferns were collected earliest, and are mostly from the Andes of Peru and Ecuador. The Formosan and Philippine ferns were collected in 1874–75. The specimens were in part identified by me before bringing them to Kew, where Mr. Baker completed the identifications, thus eliminating the novelties for me. My special thanks are due to Mr. Baker, who has aided me much, and to the authorities at Kew, who gave me free access to the herbarium and library.

The order of arrangement is that of Hooker and Baker's 'Synopsis Filicum;' and before each new species I have given the number nearest to which they would fall in the series as given there.

I. Old-World Forms.

Gleichenia dichotoma, *Willd.*	Posia, Formosa.
Cyathea spinulosa, *Wall.*	Balabac Is., Philippines.
Alsophila latebrosa, *Hooker.*	Luzon, Philippines.
Dicksonia Barometz, *Link.*	Posia, Formosa.

14*. Hymenophyllum thuidium, *Harrington*, n. sp.

Stipe slender, 1–3 inches high, winged, from 2–5 in. long, 1–2 in. broad, ovate to oblong, tri- or quadripinnate, erect; rachis and branches winged like the stipe; pinnæ 1 in. long or less, deltoid; wing and ultimate divisions of lamina finely crisped throughout; surface glabrous; sori few to many on the upper part of the frond, at the ends of the ultimate divisions, large; involucre divided nearly to the base; valves large, ovate, crisped.

Mountains of Panay, Philippines, growing thickly on the trunks of trees.

The finely crisped wing and margin of the pinnæ give the plant a resemblance to some of the mosses; hence the name assigned to it. The margins are sometimes denticulate; and exceptionally pubescence is present. The plant has affinity with *H. tortuosum*, Hooker; but it is nearer *H. crispum*, H. B. K.

Hymenophyllum polyanthos, *Swartz*. Luzon.

H. javanicum, *Spreng*. Luzon.

H. dilatatum, *Swartz*. Luzon. New to this locality.

H. tunbridgense, *Smith*. Luzon. Not found here before.

67*. H. fraternum, *Harrington*, n. sp.

Stipe slender, 2 inches high, winged; frond $2\frac{1}{2}$ inches long, $1\frac{1}{2}$ inch broad, oblong, erect, tripinnatifid; rachis and branches winged; pinnæ ovate, $\frac{3}{4}$ in. long or less; ultimate divisions linear; margin of wing and lamina crisped, denticulate; sori terminal, sessile, medium in size, scattered over the frond; involucre the width of the ultimate divisions, cleft to the base; valves elliptical, laciniate at the apex, elsewhere entire and crisped.

A single plant was found growing with the *H. thuidium*, as described. The denticulate margins and laciniate valves locate this plant near *H. tortuosum*, Hooker.

H. Neesii, *Hooker*. Luzon.

Trichomanes parvulum, *Poiret*. Luzon.

T. saxifragoides, *Presl*. Ternate.

T. digitatum, *Swartz*. Luzon.

T. pallidum, *Blume*. Luzon.

T. auriculatum, *Blume*. Luzon; Formosa.

T. Smithii, *Hooker*. Luzon.

T. apiifolium, *Presl*. Luzon.

Several specimens of this species were found of uniform size and mature, but only about 5 inches high; probably a local variety of the species.

T. rigidum, *Swartz*. Luzon.

Davallia parallela, *Wallich*. Amboyna.

D. pedata, *Smith*. Luzon; Formosa; Swatow, China.

D. affinis, *Hooker*. Luzon. Locality new.

D. vestita, *Blume*. Luzon; Swatow, China.

D. hymenophylloides, *Baker*. Luzon. Locality new.

D. pulchella, *Hooker*. Luzon; near top of volcano, Ternate.

D. repens, *Desv*. Luzon.

D. contigua, *Swartz*. Luzon.

DAVALLIA PENTAPHYLLA, *Blume*. About 2500 feet up the sides of the volcano at Ternate.

D. ELEGANS, *Swartz*. Luzon.

D. HOOKERIANA, *Wallich*. Tsuisia, Formosa.

D. STRIGOSA, *Swartz*. Interior of Formosa.

63*. D. (MICROLEPIA) PHILIPPINENSIS, *Harrington*, n. sp.

Caudex clothed thickly with narrow rufous scales; stipe about 6 inches long, dark brown, with a few scales below like those of the caudex, glabrous above; frond deltoid, 3–9 inches long, with about the same width; rachis glabrous; lower pinnæ deltoid and again pinnate, the upper becoming simple, at the apex confluent; pinnules linear, crenately lobed, with the divisions extending halfway to the midrib; the first pinnules on the lower side much larger than the others; texture coriaceous; surface glabrous; venules immersed, ascending; involucre decidedly intramarginal, broader than deep.

Mount Mahayhay, Luzon. Near *D. amboynensis*, Baker.

D. TENUIFOLIA, *Swartz*. Kelung and Posia, Formosa; Swatow, China.

LINDSAYA CONCINNA, *J. Sm.* Luzon.

L. FLABELLULATA, *Dry.* Tsuisia and Kelung, Formosa.

Several forms were found. The pinnæ may be short and rounded or long cuneate, entire or sharply serrate; the lower pinnæ may be simple or again pinnate.

L. LOBATA, *Poiret*. Luzon and Balabac and Philippines.

L. DAVALLIOIDES, *Blume*. Luzon. New locality.

ADIANTUM LUNULATUM, *Burm.* Luzon, Formosa.

A. CAUDATUM, *L.* Taiwan fu, Formosa.

A. CAPILLUS-VENERIS, *L.* Laisia, Formosa.

A. FLABELLATUM, *L.* Kelung, Formosa.

CHEILANTHES TENUIFOLIA, *Swartz*. Balabac Is., Philippines.

C. FARINOSA, *Kaulf.* Elevated mountains, Formosa.

ONYCHIUM JAPONICUM, *Kunze*. Taiwan fu and Poisia, Formosa.

PTERIS LONGIFOLIA. Taiwan fu and Takoa, Formosa.

P. CRETICA, *L.*, var. STENOPHYLLA. Laisia, Formosa.

P. SERRULATA, *L. fil.* Tamsui, Formosa.

P. ENSIFORMIS, *Burm.* Tamsui, Formosa.

P. SEMIPINNATA, *L.* Posia, Formosa.

——, var. DISPAR. Kelung, Formosa.

Pteris quadriaurita, *Retz.* Kelung, Formosa.

P. aquilina, *L.* Hong Kong.

P. incisa, *Thunbg.* Luzon; Formosa.

12*. Lomaria areolaris, *Harrington*, n. sp.

Caudex long, slender, twisted, naked; stipe 6 inches long in the sterile, nearly twice as long in the fertile fronds, glabrous; barren frond ovate, 4–6 inches long, 3–4 in. broad, pinnate; pinnæ 7–9, lateral nearly sessile, terminal stalked, form linear-lanceolate, 2–3 inches long, ½–¾ in. broad, acute, finely serrate, obtuse or rounded at the base; texture coriaceous; nerves forming a series of arches close to the midrib, thus forming on each side a row of long narrow areolæ parallel to the midrib; beyond this, nerves are free and simple or forking; surface naked, except that the midribs and nerves are a little chaffy below; texture subcoriaceous; fertile pinnæ 7–9, narrowly linear, 1½–2 inches long rather distant; indusium narrow, marginal.

Growing among the leaves of a *Pandanus*, Mount Mahayhay, Luzon.

The venation of this plant is peculiar in the genus, as there is no other species known in which the veins always unite to form areolæ. Were it not for the indusium, which is readily overlooked, except in young plants, the specimens would be placed in the genus *Acrostichum*, group *Stenochlæna*. The species could fairly form by itself a subgenus of *Lomaria*, characterized by its peculiar venation.

Blechnum orientale, *L.* Tsuisia, Formosa.

Woodwardia radicans, *Smith.* Laisia, Formosa.

W. japonica, *Swartz.* Tsuisia, Formosa.

Asplenium nidus, *L.* Amboyna; Luzon.

A. Wightianum, *Wall.* Luzon. New locality for this plant.

A. tenerum, *Forst.* Luzon.

A. lunulatum, *Sw.* Mountains of Panay, Philippines.

64*. A. Steerei, *Harrington*, n. sp.

Stipe dark grey, 5–6 inches long, firm, with a few small, brown, scattered scales; frond 8–10 in. long, 2–2½ in. broad, oblong-lanceolate; pinnæ 12–15 on each side, short-petioluled, 1½–2 in. long, ½ in. broad, apex acute, margin coarsely crenate, unsymmetrical; upper side abrupt at the base with a more or less distinct large lobe; lower side obliquely truncate; lower pinnæ slightly deflexed; texture firm, herbaceous; surface dark green above, brownish below; veins distant, simple, or once forked; sori 2–8 in a row on each side of the midrib, regular, falling a little short of midrib and margin.

Growing in small clusters on tree-trunks, Mount Mahayhay, Luzon.

This species has affinities with *A. lunulatum*, Sw., *A. persicifolium*, J. Sm., and *A. obtusifolium*, L.

Asplenium resectum, *Smith.* Mountains east of Changwha, Formosa.

A. affine, *Swartz.* Luzon.

A. lanceum, *Thunb.* Kelung, Formosa.

A. cultratum, *Mett.* Luzon.

A. bantamense, *Baker.* Balabac Island, Philippines.

A. japonicum, *Thunb*, var. coreanum, *Baker.* Changwha, Formosa.

A. latifolium, *Don.* Tsuisia, Formosa.

Didymochlæna lunulata, *Desv.* Luzon.

Aspidium aculeatum, *Sw.* Luzon.

A. amabile, *Blume.* Posia, Formosa.

A. varium, *Sw.* Posia and Kelung, Formosa.

A. aristatum, *Sw.* Luzon; Posia, Formosa.

A. falcatum, *Sw.* Kelung, Formosa.

Nephrodium decursivo-pinnatum, *Baker.* Posia, Formosa.

N. immersum, *Hooker.* Sides of volcano, Ternate.

53*. N. (Lastrea) Luersseni, *Harrington*, n. sp.

Stipes clustered, firm, shining, light purplish; frond 1½–2½ feet long, 6–10 inches broad, oblong, tapering abruptly to the base; pinnæ 4–8 inches long, 1–1½ inch broad, lanceolate, acuminate, jointed at the base, cut down almost to the rachis (rarely quite to the rachis) into numerous linear or oblanceolate lobes, which are 1–1½ inch long and 1–1½ line broad; the lowest pinnæ very small; texture membranaceous; surface naked; veinlets 8–12 on a side, simple, free, distant; sori one for each vein, marginal.

Bulukai Island, Philippines. Growing in clusters on the margin of a pond. Nearly related to *N. prolixum*, Baker.

N. Filix-mas, *Rich.* Ternate.

N. Eatoni, *Baker*, var. formosanum, *Harrington*, n. var.

Smaller and more robust than the type; the sori are larger and more crowded.

N. odoratum, *Baker.* Near Takow, Formosa. New to Formosa.

155*. N. Bakeri, *Harrington*, n. sp.

Stipes clustered, light brown, villose or scaly, 2–5 inches long;

frond 3–6 inches long, $\frac{1}{2}$–1 inch broad, oblong-oblanceolate, obtuse, coarsely crenate, the divisions extending about one third the distance to the midrib, with usually 2–4 distant, oblong-obovate, sessile pinnæ at the base, rather smaller than the lobes; texture papyraceous; surfaces villose throughout; venules usually 6 on each side, of which 4 unite with the opposite venules of the adjacent lobe; indusium small, hairy, rarely present.

Found growing in small clusters on the ground in very shaded places. Mountains of Panay island, Philippines.

This plant is closely related to Hooker's *N. Skinneri* and *N. scolopendrioides*; but they are both American forms.

NEPHRODIUM SOPHOROIDES, *R. Brown.* Tsuisia, Formosa.

A reduced form of this plant, probably merely starved, was found in Formosa. The fronds are only 4–6 inches long (with the stipe); the pinnæ are obtuse, and broader; texture coriaceous. Mr. Baker suggests that it bears the same relation to *N. sophoroides* that *N. latifolium* does to *N. molle.*

N. MOLLE, *Desv.* Swatow, China.

N. TRUNCATUM, *Presl.* Luzon.

202*. N. (SAGENIA) SUBPEDATUM, *Harrington,* n. sp.

Stipe 1 foot long, slender, stramineous; frond 6–8 inches long, 5–7 in. broad, ovate, simple, 5-lobed, the lower divisions slight, the upper extending two thirds of the way to the base; apex acuminate, base cordate, margin slightly undulate; the central lobe is largest, ovate; texture papyraceous; areolæ copious, each with 1–3 included free veinlets; veins distinct nearly to the margin; sori few, small, scattered.

Near Takow, Formosa.

An interesting fern, but only two specimens, only one of which is fruiting. I have not found the indusium; but its close resemblance to *N. ternatum*, Baker, leads me to place the species in the genus *Nephrodium.* It may possibly, with fuller material, prove not to be distinct from *N. ternatum.*

N. LATIFOLIUM, *Baker.* Formosa.

N. CICUTARIUM, *Baker.* Formosa.

NEPHROLEPIS CORDIFOLIA, *Presl.* Kelung, Formosa.

N. ACUTA, *Presl.* Luzon.

N. RAMOSA, *Moore.* Isabella de Batilan, Philippines.

N. FLOCCIGERA, *Moore.* Amboyna.

POLYPODIUM UROPHYLLUM, *Wall.* Luzon.

74*. P. (GONIOPTERIS) AORISTISORUM, *Harrington,* n. sp.

Caudex short and thick, with slender brown scales; stipes clustered, 3–6 inches long, slender, grey, slightly pubescent above; frond 6–10 in. long, $\frac{3}{4}$–$1\frac{1}{4}$ in. wide, linear-lanceolate, the lower pinnæ reflexed; pinnæ 20–40 on each side, 6–8 lines long, 3–4 lines broad, elliptical, slightly falcate, obtuse, coarsely crenate, auricled on the upper side, short-stalked or sessile; texture subcoriaceous; rachis and under surface of veins pubescent; veins pinnate, 2–3 veinlets on each side, of which usually but one unites with the opposite one of the next lobe; sori indefinite.

Mountains of Panay, Philippines. Growing in clusters on the ground.

The sporangia are scattered over the under surface of the frond, though a grouping into indefinite sori can be distinguished. The plant is related to the American *P. reptans*, Swartz.

POLYPODIUM HIRTELLUM, *Bl.* Luzon.

P. CUCULLATUM, *Nees.* Luzon.

P. MINUTUM, *Bl.* Luzon.

169*. P. (EUPOLYPODIUM) SCHENKII, *Harrington*, n. sp.

Caudex thick, horizontal, densely clothed with slender brown scales; stipes clustered, 2–3 inches long, brown, pubescent, firm, erect; frond 6–12 inches long, $1\frac{1}{2}$–2 in. wide, oblong, tapering gradually above and below, pinnate; pinnæ numerous, $\frac{1}{2}$–1 inch long, 1–2 lines broad, linear, obtuse, entire, broadened and nearly confluent at the base; lowest pinnæ small, triangular; fertile and sterile pinnæ alike; texture membranous; rachis pubescent, surfaces otherwise naked; venules simple, free, falling short of the margin; sori not confined to one part of the frond, deeply immersed, margins of the depression nearly covering them, oblong, 4–8 in a row on each side of the the midvein, obliquely falling a little short of midvein and margin.

Growing in clusters on trunks of trees. Mountains of Panay, Philippines.

Nearest to *P. blechnoides*, Hooker.

169**. P. (EUPOLYPODIUM) CRATERISORUM, *Harrington*, n. sp.

Caudex clothed with dense, brown, lanceolate scales; stipes clustered, $\frac{1}{2}$–$1\frac{1}{2}$ inch long, hirsute with brown hair, firm, erect; frond 8–12 inches long, $1\frac{1}{2}$–$2\frac{1}{2}$ in. wide, oblong or oblong-oblanceolate, tapering above and below, pinnate; pinnæ numerous, linear, about 1 inch long and 2 lines broad, obtuse, entire, broadened and more or less confluent at the base, passing below into the narrow, lobed wing of the stipe; rachis pubescent, surfaces otherwise naked; texture membranous; venules simple, free, falling short of the margin; sori confined to the upper part of the frond, immersed, oval, 5–10 in a row on each side of the midrib, about halfway between it and the margin. The edge of the cup, in which the sorus is sunk, forms a projecting rim, but does not cover the sorus.

Growing in small drooping tufts, some distance up the trunks of trees, Mount Mahayhay, Philippines.

Closely related to the *P. Schenkii* just preceding, but distinguished by its shorter stipe and by its sori, which are confined to the upper part of the frond, oval in shape and not covered by the rim of the depression.

POLYPODIUM ADNASCENS, *Swartz.* Ternate, Philippines.

P. LINGUA, *Sw.* Swatow, China.

P. ACCEDENS, *Blume.* Luzon.

299*. P. (PHYMATODES) HAMMATISORUM, *Harrington*, n. sp.

Rhizome long and slender; scales thin, membranous, long-lanceolate, light brown; stipes scattered along the rhizome, ¼–1½ in. long for the sterile frond, 1–3 in. long for the fertile, slender, naked, erect; sterile frond elliptical, ½–1½ in. long, ¼–1 in. broad, obtuse, coarsely and shallowly crenate, except at the tapering base; sterile frond linear, 2–5 in. long, 2 lines broad, with a lobe under each sorus; texture coriaceous; surfaces smooth; veins immersed; midrib distinct; sori about 20 in a row on each side of the midrib, nearly opposite, large, giving the fertile frond a knotted appearance.

Growing on fallen timber, Mount Mahayhay, Luzon.

A very distinct plant, related to *P. rostratum*, Hooker.

311*. P. (PHYMATODES) STEEREI, *Harrington*, n. sp.

Stipes very short or none; frond 5–12 in. long, 1–2½ in. broad, simple, oblong-oblanceolate, obtuse to acuminate above, gradually tapering below; margin entire, slightly thickened; surfaces naked; texture coriaceous; midrib strong; sori copious, small, irregularly scattered, on the ends of free or backs of united veinlets; areolæ abundant, irregular.

Shaded places under overhanging rocks, Apes' Hill, Takow, Formosa.

Near *P. superficiale*, Blume, but distinguished by its thicker texture, smaller and more numerous sori, and the very short stipe.

P. TRIQUETRUM, *Bl.* Ternate.

P. HETEROCARPUM, *Blume*, var. β. ZIPPELLII, *H. & B.* Philippines.

Polypodium hastatum, *Thunb.* Kelung and Posia, Formosa

P. pteropus, *Blume.* Posia, Formosa.

P. dipteris, *Blume.* Luzon.

P conjugatum, *Lam.* Hongkong; Posia, Formosa.

P. Fortunei, *Kunze.* Changwha, Formosa.

P. palmatum, *Blume.* Luzon.

P. Moseleyi, *Baker.* Side of Volcano, Ternate.

Recently described by Mr. Baker from specimens collected in the same place by the ‘Challenger’ Expedition.

Nothochlæna hirsuta, *Desv.* Taiwan fu, Formosa.

Monogramme Junghuhnii, *Hooker.* Kelung and Posia, Formosa.

Gymnogramme lanceolata, *Hooker.* Near Takoa, Formosa.

G. Wrightii, *Hooker.* Kelung and Posia, Formosa.

G. macrophylla, *Hooker.* Luzon.

G. elliptica, *Baker.* Posia, Formosa.

Meniscium triphyllum, *Sw.* Posia, Formosa.

Antrophyum immersum, *Mett.* Amboyna; Philippines.

A. plantagineum, *Kaulf.* Amboyna; Mts. of Formosa.

A. callæfolium, *Blume.* Mts. of Panay, Philippines.;

A. semicostatum, *Blume.* Luzon.

Vittaria elongata, *Sw.* Amboyna; Luzon; Balabac Formosa.

V. falcata, *Kunze.* Luzon.

V. lineata, *Sw.* Amboyna.

Drymoglossum carnosum, *Hooker.* Amboyna.

Same, var. obovatum, *Harrington*, n. var.

Sterile fronds obovate, $\frac{1}{2}$–1 inch long, $\frac{1}{4}$-$\frac{1}{2}$ in. broad, with a stipe $\frac{1}{4}$–$\frac{1}{2}$ in. long; fertile frond 1–1$\frac{1}{2}$ in. long, stipe $\frac{1}{2}$–1 in. in length, sori close to the midrib; areolæ including each, only one free veinlet.

Climbing on trees, Posia, Formosa.

This variety falls between *D. carnosum* typical form and the variety *subcordatum*.

Same, var. subcordatum, *Hook. & Baker.* Tamsui, Formosa. Smaller than the preceding.

D. piloselloides, *Presl.* Luzon.

Hemionitis cordata, *Roxb.* Formosa.

Hemionitis Zollingeri, *Kurz.* On exposed rocks, not very elevated, Mts. of Panay, Philippines.

Acrostichum latifolium, *Sw.* Luzon.

A. quercifolium, *Retz.* Formosa.

No fruiting fronds found; but the species is unmistakable.

A. aureum, *L.* Balabac, Philippines.

A. spicatum, *L.* Ternate.

A. platyrhynchos, *Hooker.* Luzon.

Osmunda javanica, *Blume.* Hongkong.

Lygodium dichotomum, *Sw.* Balabac, Philippines; Amboyna.

L. scandens, *Sw.* Luzon; Posia, Formosa; Swatow, China.

Angiopteris erecta, *Hoffm.* Luzon.

Ophioglossum pendulum, *L.* Amboyna.

Helminthostachys zeylanica, *Hooker.* Balabac, Philippines.

Lycopodium cernuum, *L.* Old part of crater, Ternate.

L. phlegmaria, *L.* Luzon.

Selaginella atroviridis, *Spring.* Hongkong; Posia, Formosa.

Selaginella. Mts. of Panay, Philippines.

Without fruit; near *S. caulescens*: probably a new species.

II. American Forms.

Gleichenia pubescens, *H. B. K.* Mountain-tops, Cumbassauma mts., Peru.

Alsophila ferox, *Pr.* Pebas, Peru.

Woodsia mollis, *J. Sm.* Matucana, Peru.

W. obtusa, *Hooker.* Peru; Ecuador.

Hymenophyllum polyanthos, *Swartz.* Peru; Ecuador.

Trichomanes brachypus, *Kunze.* Pebas, Peru.

T. crispum, *L.* Peru.

A very variable species.

Davallia inæqualis, *Kunze.* Peru.

Cystopteris fragilis, *Bernh.* Peru; Ecuador.

Lindsaya trapeziformis, *Dry.*, var. falcata. Peru.

Adiantum Kaulfussii, *Kunze.* Ecuador.

13*. A. Steerei, *Harrington*, n. sp.

Stipes 4–8 inches long, naked, polished, dark brown; frond rather shorter than the stipe, pinnate; pinnæ ¾–1 in. broad, ⅜–⅝ in. deep, dimidiate, lower margin straight, lateral and upper margins rounded, broadly crenate, stalk of pinnæ slender, ½ inch long below, becoming less above; uppermost pinnæ cuneate, lowest more or less completely non-dimidiate with opposite sori; texture subcoriaceous; veins free; surfaces naked throughout; sori 25 or less to a pinna, reversed reniform, as broad as deep, apparently intramarginal.

Shaded rocks, along streams of water between Myobamba and Chachapoyas, Peru; also hanging from damp rocks, Poma Cocha, Peru, July 1872.

The margins of the cuts at the base of which the sori lie are so closely approximated that the sori appear intramarginal. The plant is related to *A. Shepherdi*, Hooker, but has affinities with *A. lunulatum*, Burm., and *A. Galeottianum*, Hooker.

ADIANTUM MACROPHYLLUM, *Swartz.*	Ecuador.
A. ÆTHIOPICUM, *L.*	Peru; Ecuador.
CHEILANTHES MATTHEWSII, *Kunze.*	Peru.
C. MICROPHYLLA, *Swartz.*	Peru.
C. MYRIOPHYLLA, *Desv.*	Peru; Ecuador.
C. SCARIOSA, *Kaulf.*	Peru.
PELLÆA GERANIIFOLIA, *Fée.*	Peru.
P. TERNIFOLIA, *Fée.*	Peru; Ecuador.
P. MARGINATA, *Baker.*	Peru; Ecuador.
P. CORDATA, *J. Smith.*	Peru.
PTERIS CRETICA, *L.*	Peru.
Same, var. STENOPHYLLA.	Poma Cocha, Peru.
P. AQUILINA, *L.*	Peru.
P. PEDATA, *L.*	Peru.
P. INCISA, *Thunbg.*	Contumarca, Peru.
BLECHNUM OCCIDENTALE, *L.*	Peru; Ecuador.
B. SERRULATUM, *Rich.*	Mouth of the Amazon.
ASPLENIUM FRAGILE, *Presl.*	Cumbassauma mts., Peru.
A. MONANTHEMUM, *L.*	Peru.
A. TRICHOMANES, *L.*	Peru; Ecuador.
A. EXTENSUM, *Fée.*	Peru.
A. LUNULATUM, *Sw.*	Peru; Ecuador.
A. RHIZOPHYLLUM, *L.*	Ecuador.
A. AURITUM, *Swartz.*	Peru.
A. FURCATUM, *Thunb.*	Peru; Ecuador.
A. FRAGRANS, *Swartz*, var. FŒNICULACEUM, *H. B. K.*	Foot of Chimborazo.

Asplenium triphyllum, *Presl.* Near Quito.

A small form from the Peruvian Andes between Motucana and Pucara.

A. cicutarium, *Swartz.* Peru; Ecuador.

A. Filix-fœmina, *Bernh.* Peru.

A. aculeatum, *Sw.* Peru.

Nephrodium concinnum, *Baker.* Peru; Ecuador.

N. Filix-mas, *Rich.* Peru.

N. effusum, *Baker.* Peru.

Polypodium delicatulum, *M. & G.* Peru; Ecuador.

P. plumula, *H. B. K.* Peru.

P. plebeium, *Schlecht.* Ecuador.

P. murorum, *Hooker.* Ecuador.

P. piloselloides, *L.*, var. β, *H. & B.* Caviana, Brazil.

Same, var. γ, *H. & B.* Peru.

P. loriceum, *L.* Ecuador.

P. attenuatum, *H. B. K.* Cairana, Brazil.

P. adnatum, *Kunze.* Cairana, Brazil.

P. fraxinifolium, *Jacq.* Peru.

P. squamatum, *L.* Peru.

P. incanum, *Sw.* Cairana, Brazil; Peru.

261*. P. (Goniophlebium) xantholepis, *Harrington*, n. sp.

Rhizome with dense, lanceolate, brown scales; stipe 2–5 inches high, black, with distant, membranous, brown scales, wiry, usually with the frond more or less spirally coiled; frond 2–5 in. long, $\frac{3}{4}$–$1\frac{1}{4}$ in. broad, long, triangular to lanceolate, cut nearly to the rachis into spreading, subdistant pinnæ, $\frac{1}{2}$–$\frac{3}{4}$ in. long, linear, entire, obtuse; midrib broad, green; texture coriaceous; under surface thickly clothed with large, brown, lanceolate, membranous scales, naked above; sori large, uniserial.

Oroya, between San Bartolomeo and San Mateo, Peru.

Very near *P. incanum*, Swartz, but lacking entirely the lepidote character and silvery aspect of that species. It is also somewhat larger than the *P. incanum*.

P. aureum, *L.* Cairana, Brazil.

P. angustifolium, *Sw.* Near Quito.

P. sphenodes, *Kunze.* Peru.

P. lævigatum, *Cavan.* Cairana, Brazil.

——, var. rigidum, *Harrington*, n. var. Rio Utcubamba, Peru.

Texture rigid; venation entirely goniophlebioid.

Polypodium percussum, *Cavan.* Peru.

P. lanceolatum, *L.* Ecuador; Rio Utcubamba, Peru.

The specimens from the locality are all pinnately lobed nearly to the rachis. In neither lot of specimens are the sori immersed.

P. persicariæfolium, *Schrad.* Peru.

P. crassifolium, *L.* Peru.

Nothochlæna sinuata, *Kaulf.* Peru.

N. ferruginea, *Hooker.* Peru; Ecuador.

N. doradilla, *Colla.* Peru.

N. tenera, *Gill.* Peru.

N. nivea, *Desv.* Peru.

Gymnogramme pumila, *Spreng.* Brazil.

G. tomentosa, *Desv.* Peru.

G. angustifrons, *Baker.* Peru.

G. tartarea, *Desv.* Near Quito.

G. calomelanos, *Kaulf.*, var. denudata, *Harrington*, n. var. Peru.

The farina almost completely absent.

Antrophyum lineatum, *Kaulf.* Peru.

Vittaria stipitata, *Kunze.* Peru.

Tænitis angustifolia, *R. Brown.* Cairana, Brazil.

Acrostichum latifolium, *Sw.* Mountain-tops, Cumbassauma mountains, Peru.

A. scolopendrifolium, *Raddi.* Peru.

A. spathulatum, *Bory.* Near Quito.

A. muscosum, *Sw.* Ecuador; Peru.

A. squamosum, *Sw.* Mountain-tops, Cumbassauma mountains, Peru.

A. aureum, *L.* Mouth of the Amazon.

Anemia tomentosa, *Sw.* Peru.

A. phyllitidis, *Sw.* Peru.

Lygodium venustum, *Sw.* Cairana, Brazil.

Lycopodium linifolium, *L.* Peru.

Selaginella cuspidata, *Link.* Peru.

S. exaltata, *Spring* Peru.

S. geniculata, *Spring.* Para, Brazil.

CONTRIBUTIONS TO THE BOTANY OF H.M.S. 'CHALLENGER.'

XXXVIII. Enumeration of the Fungi collected during the Expedition of H.M.S. 'Challenger,' 1874–75. By the Rev. M. J. BERKELEY, M.A., F.L.S. (Third Notice.)

[Read February 1, 1877.]

(Plate II.)

PENNANT HILLS, PARAMATTA. June 1874.

83. AGARICUS (AMANITA) VAGINATUS, *Bull.*

84. A. (ARMILLARIA) MELLEUS, *Fl. Dan.*, var. MINOR. Stipite transversim squamoso.

On dead wood.

It is very possible that this may be quite a distinct species; but in the absence of all indication as to colour, I am content to point out its affinities.

85. A. (FLAMMULA) SAPINEUS, *Fr. Hym. Eur.* p. 251.

This species in most cases probably occurs on imported deal, exactly as we have northern species on timbers in our railroads.

86. A. (PSALLIOTA) CAMPESTRIS, *L.*

87. A. (PANÆOLUS) CAMPANULATUS, *L.*

88. LACTARIUS SUBTOMENTOSUS, *B. & Rav. Ann. Nat. Hist.* Oct. 1859.

89. CANTHARELLUS CIBARIUS, *Fr. Hym. Eur.* p. 455.

90. C. CONCINNUS, *B.* Pusillus; stipite sursum incrassato, lamellis furcatis angustissimis; interstitiis lævibus.

Pileus ½ inch across; stem ½ inch high, 2 lines thick at the apex, half as much below.

91. MARASMIUS PRIMULINUS, *B.* Pileo e convexo explanato primulino, demum umbilicato pulverulento; margine striato; stipite brevi gracili furfuraceo; lamellis crassiusculis concoloribus.

Pileus ½ inch across; stem ½ inch high.

92. M. OPACUS, *B. & C. Hook. Journ.* 1849, p. 99.

93. LENTINUS FASCIATUS, *B. Hook. Lond. Journ.* 1840, p. 146.

94. PAXILLUS MÜLLERI, *B. Linn. Soc. Journ.* vol. xiii. p. 159.

95. SCHIZOPHYLLUM COMMUNE, *Fr. Hym. Eur.* p. 492.

96. BOLETUS SUBTOMENTOSUS, *L.*

97. B. ANANÆCEPS, *B. Linn. Soc. Journ.* vol. xiii. p. 161.

98. POLYPORUS (MESOPUS) OBLECTANS, *B. Hook. Lond. Journ.* 1845.

99. P. (PLEUROPUS) RUGOSUS, *Nees, N. Act.* xii. tab. 7.

Sometimes the stem is central with a regular pileus; sometimes the pileus is very imperfectly developed and scarcely rugose.

100. POLYPORUS (PLEUROPUS) SANGUINEUS, *Fr.*

101. P. (PLEUROPUS) RHIPIDIUM, *B. Hook. Lond. Journ.* 1849, p. 319.

102. P. (PLEUROPUS) PEROXYDATUS, *B.* Tenuis suborbicularis, rubiginoso-pulverulentus; pileo leviter zonato rugoso; stipite brevi crasso; hymenio convexo ferrugineo; poris angulatis; contextu rhabarbarino.

Pores $\frac{1}{96}$ inch in diameter. Colour of pileus like that of peroxide of iron.

103. P. (ANODERMEI) TEPHRONOTUS, *B. Fl. Tasm.* ii. p. 252.

104. P. (ANODERMEI) OCHROLEUCUS, *B. Hook. Lond. Journ.* 1845, p. 53.

105. P. (ANODERMEI) SEMIDIGITALIFORMIS, *B.* Gregarius; pileo ungulato e mycelio tomentoso oriundo albido rugoso tomentoso; poris majoribus, postice lamellatis.

Scattered over the flat surface of dry wood. Pileus $\frac{1}{4}$–$\frac{1}{3}$ inch wide; pores $\frac{1}{10}$–$\frac{1}{36}$ inch in diameter. A very curious species which has sometimes a tendency to become imbricated.

106. P. (PLACODERMEI) PORTENTOSUS, *B. Hook. Lond. Journ.* 1844, p. 188.

107. P. (PLACODERMEI) AUSTRALIS, *Fr. El.* p. 108.

108. P. (INODERMEI) SCRUPOSUS, *Fr. Ep.* p. 473.

109. P. (INODERMEI) CINNABARINUS, *Fr. Syst. Myc.* p. 371.

110. P. (INODERMEI) LILACINO-GILVUS, *B. Ann. Nat. Hist.* iii. p. 324.

111. P. (RESUPINATI) OBLIQUUS, *Fr. Ep.* p. 482.

112. TRAMETES RIGIDA, *B. & Mont. Syll.* p. 168.

113. T. OCCIDENTALIS, *Fr.*; *Klotzsch, Linn.* viii. p. 486.

114. T. DEVEXA, *B. Linn. Soc. Journ.* xiii. p. 165.

115. T. MOLLIS, *Fr. Hym. Eur.* p. 585.

116. DÆDALEA GLABRESCENS, *B.* Pulvinato-expansa crassa e scabro-tomentoso glabra zonata pallida, margine acuto, lamellis crassis rectis quandoque postice insigniter flexuosis.

Pileus 6 inches wide, 3 long.

Allied to *D. tenuis*, but with far thicker gills.

117. HYDNUM (MESOPUS) NIGRUM, *Fr. Hym. Eur.* p. 605.

118. H. (RESUPINATUM) XANTHUM, *B. & C. Grevillea, Not. N.-Am. Fung.* p. 10, var. Aculeis non compressis pendulis totum re-

supinatum pallide aurantiacum; aculeis subacutis e strato lætiore ceraceo oriundis.

119. STEREUM HIRSUTUM, *Fr. Hym. Eur.* p. 639.

120. S. ILLUDENS, *B. Hook. Lond. Journ.* 1845, p. 59.

121. CLAVARIA FLAVA, *Schæff.*; *Fr. Hym. Eur.* p. 666.

122. C. BOTRYTIS, *P.*; *Fr. Hym. Eur.* p. 667.

123. C. AUREA, *Schæff.*; *Fr. Hym. Eur.* p. 670.

124. GUEPINIA SPATHULARIA, *Fr. El.* p. 32.

125. TREMELLA LUTESCENS, *P.*; *Fr. Syst. Myc.* p. 213.

126. HYMENANGIUM MOSELEI, *B. & Br.* Suborbiculare basi attenuatum citrinum glabrum; hymenio ochraceo basi distincta alba; sporis ovatis apice attenuatis pedicellatis hyalinis lævibus.

About ½ an inch in diameter; spores ·0006 inch long with one or sometimes two nuclei.

127. SEPEDONIUM CHRYSOSPERMUM, *Lk. Sp.* i. p. 29.

128. GEASTER MINIMUS, *Schwein. Car.* p. 327.

129. G. SACCATUS, *Fr. Syst. Myc.* iii. p. 16.

130. G. DUBIUS, *B.* Peridio externo crasso globoso lævi subtiliter pulverulento cervino, centro depresso, demum aperto, mycelio substipitiformi suffulto; floccis fuscis, sporis minimis lævibus globosis.

About ½ an inch in diameter; outer peridium, when dry, consisting of two distinct layers, while the mass of flocci and spores is surrounded by a thin inner peridium. As far as appears from the specimens, the outer peridium does not become stellate.

131. TRICHODERMA VIRIDE, *P.*

The conidiiferous state of *Hypocrea rufa.*

TONGATABU. July 1874.

132. POLYPORUS (PLEUROPUS) AMBOINENSIS, *Fr. Ep.* p. 442.

A stemless form on cocoa-nut stems.

133. TRAMETES MOSELEI, *B.* Imbricatus; pileis reniformibus vertice affixis spadiceis marginem versus lætioribus rubiginosis, repetite zonatis lineato-rugosis; contextu albo.

Pileus 3 inches across, 2 long; pores $\frac{1}{36}$ inch in diameter.

Has somewhat the appearance of *P. Persoonii.* A very noble species.

134. COPRINUS NYCHTHEMERUS, *Bull. Fr. Ep.* p. 251.

API (NEW HEBRIDES). Aug. 18, 1874.

135. SCHIZOPHYLLUM COMMUNE, *Fr. Ep.* 403.

136. Polyporus (Placodermei) australis, *Fr. Ep.* p. 464, var. applanata.

Pores not stratose; flesh without harder parallel layers, as in the form from Ternate.

137. Hirneola polytricha, *Mont.*; *Fr. Fung. Nat.* p. 26.

Somerset, Cape York. Sept. 1-8, 1874.

138. Polyporus (Mesopus) xanthopus, *Fr. Obs.* ii. p. 255.

139. P. (Mesopus) dictyopus, *Mont. Ann. Sc. Nat.* 135, iii. p. 349.

140. P. (Anodermei) fœdatus, B. Pileo subtenui reniformi azono umbrino fuliginoso; margine pallido radiato-rugoso sterili; centextu pallido sericeo; poris punctiformibus acie obtusis pallide cinnamomeis.

Pileus 3 inches across, $1\frac{1}{2}$-2 inches long; pores $\frac{1}{96}$ inch in diameter.

141. P. (Placodermei) incrassatus, *B.* Durus reniformis; pileo primum tenui azono, demum incrassato rugoso marginem versus repetite zonato pulverulento coffeato; cuticula dura; hymenio cinnamomeo; margine demum sterili sulcato; contextu ferrugineo; poris punctiformibus, dissepimentis obtusis rigidis.

Pileus 3 inches across; pores $\frac{1}{84}$ inch in diameter.

142. Hexagona tenuis, *Fr. Ep.* p. 498.

143. Stereum prolificans, *B.* Gregarium infundibuliforme, stipite brevissimo; pileo sulcato-zonato velutino spadiceo; hymenio lævi plicato nitido brunneo.

Pileus 2 inches across, 1 inch high, with a number of young infundibuliform pilei at the base with the hymenium superior or reniform, attached by a distinct orbicular base, repeatedly zoned and sulcate, of a rich brown; hymenium dark brown, sometimes slightly zoned.

144. Hirneola rufa, *B. Ann. Nat. Hist.* vol. x. p. 384.

"These fungi were all found in the dry condition, being collected in the dry season. Some are attacked by an insect-larva whose dung takes the form of a curious fluffy mass."

Aru. Sept. 22, 1874.

145. Agaricus (Flammula) sapineus, *Fr. Hym. Eur.* p. 251.

146. A. (Panæolus) campanulatus, *L.*

147. Marasmius aruensis, *B.* Pileo centro depresso fulvo

subtiliter pulverulento; stipite gracili e basi crassiuscula oriundo e fulvo brunneo; lamellis fulvis.

Pileus ½–1 inch wide; stem ⅓–1½ inch high.

148. MARASMIUS ALEUROCEPHALUS, *B.* Pileo convexo aleuriato rugoso-plicato fulvo; stipite compresso brunneo basi incrassato.

Pileus ¼ inch across; stem ½ inch high.

Specimens few and in bad condition.

149. M. DIREPTUS, *B.* Pusillus albidus rugosissimus; pileo primum horizontali demum reflexo; stipite centrali direpto; lamellis paucis adnatis crassiusculis acie obtusis.

About 1½ line across; stem torn off, as the pileus is turned back and left in the centre; the rugose crumpled pileus, under a lens, is very peculiar.

150. LENTINUS LEVEILLEI, *B. Linn. Tr.* xx. p. 112, and a small variety.

151. L. HOOKERIANUS, *B. Hook. Journ.* 1851, p. 44.

152. L. STRIGOSUS, *B. Fr. El.* p. 47.

153. POLYPORUS (MESOPUS) XANTHOPUS, *Fr. Obs.* ii. p. 285.

154. P. (PLEUROPUS) AFFINIS, *Nees, Fr. Ep.* p. 445.

155. P. (PLEUROPUS) COCHLEAR, *Nees, Act. Nat. Cur.* xiii. tab. 6.

156. P. (PLEUROPUS) LUTEUS, *Nees. Fr. Ep.* p. 445.

157. P. (PLEUROPUS) MELEAGRIS, *B.* Pileo flabelliformi stipite brevissimo affixo zonato radiato lineato brunneolo; margine lobato acutissimo quandoque striato; hymenio e pallido umbrino; poris angulatis hic illic sinuatis, dissepimentis rigidiusculis.

Pileus 2–3 inches across, 1½ long; pores $\frac{1}{108}$ in diameter. Sometimes infundibuliform. There is a variety (a single specimen only) with a longer stem which is slightly laccate.

158. P. (ANODERMEI) ARMENIACUS, *B. Hook. Journ.* 1856, p. 197; P. armeniacus, *Eng. Fl.* is P. amorphus.

159. P. (ANODERMEI) ABRUPTUS, *B.* Durissimus imbricatus reviviscens; pileo lignicolori hic illic rufescente glabrato; hymenio noduloso, juniore pallido, seniore pallescente; poris punctiformibus.

Pilei by confluence 2–3 inches across, adnate, and decurrent behind, very rigid, the hymenium reproduced irregularly and nodulose. A coarse species.

160. P. (PLACODERMEI) AUSTRALIS, *Fr. Ep.* p. 464. A small form.

161. P. (PLACODERMEI) ZONALIS, *B. Hook. Lond. Journ.* 1847, p. 504.

162. P. (PLACODERMEI) SENEX, *N. & Mont. Syll.* p. 160.

163. P. (Placodermei) aruensis, *B.* Pileo dimidiato tenui sulcato-zonato radiato-rugoso primum pulverulento brunneo, margine tenuiori; hymenio concolori; poris demum elongatis; contextu ferrugineo.

Pileus 2 inches across, $1\frac{1}{2}$ long; pores $\frac{1}{60}$ inch in diameter.

164. Polyporus (Inodermei) scruposus, *Fr. Ep.* p. 473. var. Pileo duro renifermi velutino repetite sulcato-zonato umbrino contextu rhabarbarino.

165. P. (Inodermei) tabacinus, *Mont. Ann. Sc. Nat.* 1835, iii. p. 349.

166. P. (Inodermei) floridanus, *B. Ann. Nat. Hist.* x. p. 376.

167. Trametes occidentalis, *Fr.*; *Klotzsch, Linn.* viii. p. 486.

168. T. cognatus, *B.* Pileo dimidiato sulcato-zonato subtiliter scabroso-tomentoso postice glabrescente ochraceo; hymenio plano, poris punctiformibus acie subtiliter tomentosis.

Pileus $1\frac{1}{2}$ inch across, 1 inch long; pores $\frac{1}{180}$ in diameter. Externally resembling *F. Mülleri*, B.; but the pores are very different.

169. T. bicolor, *B.* Pileo reniformi lobato postice sanguineo, antice pallido ruguloso; hymenio umbrino; poris e subhexagonis elongatis; contextu pallido.

Pileus 2 inches across, 1 inch long; pores $\frac{1}{60}$ inch in diameter.

170. Hexagona arata, *B.* Tenuis rigidiuscula imbricata dimidiata v. flabelliformis regulariter sulcato-zonata scabroso-tomentosa umbrinella; hymenio e luteo-umbrino cinnamomeo; poris dentatis.

Pores $\frac{1}{48}$ inch in diameter. Allied to *H. sericea.*

171. Hexagona affinis, *B. Lond. Journ.* 1843, p. 4.

172. Favolus saccharinus, *B.* Pileo flabelliformi sessili subtiliter velutino glabrescente; poris sinuatis flexuosis.

Pileus $\frac{1}{2}$–1 inch across, at first very minutely velvety so as to have a saccharine appearance; pores arranged in lines proceeding from a common base.

173. F. brasiliensis, *Fr. Ep.* p. 498.

174. Laschia longipes, *B.* Pileo tenui umbilicato pallide aurantiaco, margine lobato; stipite elongato sursum dilatatato fissili; poris brevibus angustis sinuatis radiantibus.

About 1 inch across; stem 2 inches high, not 1 line thick. Specimen bad, but very distinct.

175. Lenzites applanata, *Fr. Ep.* p. 404.

176. Dædalea indurata, *B,* Pileo albido, disco parvo affixo radiato-rugoso marginem versus zonato; hymenio ochroleuco; poris minutis sinuosis.

Pileus $1\frac{1}{2}$ inch across, 1 long; pores $\frac{1}{60}$ inch in diameter. A very distinct species, of which there is a single specimen only.

177. IRPEX MAXIMUS, *Mont. Syll.* p. 174.

178. STEREUM LOBATUM, *Fr. Ep.* p. 547.

179. S. VESPILLONEUM, *B.* Tenue flabelliforme vertice parvo orbiculari affixo; pileo badio rufo zonato velutino; hymenio badio, margine sterili pallido.

Pileus $2\frac{1}{2}$–3 inches across, 2 long, then repeatedly zoned velvety with a few dark, nearly smooth interstices.

180. S. EFFUSUM, *B.* Pallidum margine inflexo lacerato-lobato, lineato pulverulento; hymenio lineato.

Pileus by confluence 3 inches wide. Pileus sometimes scarcely lineate, and then more pulverulent.

181. S. INDURATUM, *B.* Durissimum conchiforme concentrice sulcatum velutinum; hymenio lævi subtiliter pulverulento, contextu rhabarbarino.

Pileus 3 inches across. Distinguished at once by its very hard thick substance from *S. ostreatum* and its allies.

182. THELEPHORA LAMELLATA, *B. U.S. Exp. Exp.* tab. *Fungi*, fig. 7.

There is also a specimen in the collection from Taviuni given by Dr. Good, of H.M.S. 'Dido.'

183. LACHNOCLADIUM FURCELLATUM, *Lév. Ann. Sc. Nat.* 1846, v. p. 159.

184. L. SEMIVESTITUM, *B. & C. Grevillea, Not. N.-Am. Fungi*, no. 226.

185. HIRNEOLA RUFA, *B. Ann. Nat. Hist.* x. p. 384.

186. PEZIZA HINDSII, *B. Lond. Journ.* 1842, p. 456.

187. XYLARIA PILICEPS, *B.* Clavula subturbinata coffeata rimosa molli fragili ostiolis subprominulis punctata; stipite gracili concolori laccato rimoso, contextu pallido.

Stem $1\frac{1}{4}$ inch high; head $\frac{1}{2}$ inch high, $\frac{1}{3}$ wide. I find no sporidia.

188. HYPOXYLON CONCENTRICUM, *Grev.* t. 324.

TERNATE (MOLUCCAS). Oct. 1874.

189. POLYPORUS (PLACODERMA) AUSTRALIS, *Fr.*, var. APPLANATA. Pores not stratose. The soft dark substance of the pileus has harder strata intermixed.

190. HEXAGONA POLYGRAMMA, *Mont. Syll.* p. 169.

A form with smaller pores $\frac{1}{45}$ inch in diameter instead of $\frac{1}{24}$.

191. Polyporus (Inodermei) russogramme, *B.* Umbone affixus spadiceo-rufus coriaceo-mollis rigescens; pileis imbricatis subzonatis radiato-lineatis, margine acutissimo tenui lacerato; poris irregularibus; dissepimentis acutis tenuibus dentatis flexuosis.

Pores $\frac{1}{214}$ inch in diameter.

Little Ké. Sept. 24.

192. P. (Pleuropus) sanguineus, *Fr.*

193. P. (Placodermei) Persoonii, *Fr.*—*Dædalea sanguinea*, Kl. *l. c.* p. 481.

194. Trametes occidentalis, *Fr.*

195. Hypoxylon vernicosum, *Fr. Summ.*

Camiguin, Malanipa, Malamon (Philippines).
Jan. 30–Feb. 4, 1875.

196. Lentinus Leveillei, *B. Tr. Linn. Soc.* xv. tab. 9. fig. 5. Camiguin. Originally from Surinam.

197. L. abnormis, *B.* Gregarius cæspitosus; pileo tenui infundibuliformi hispidulo; margine tenui lobato; stipitibus elongatis luteis furfuraceis e basi orbiculari confluentibus, sursum dilatatis; lamellis angustissimis decurrentibus integris.

Pilei 1–2 inches across, stem 3 inches high, 1–2 lines thick, orbicular base ⅓ inch.

Malamon.

198. L. exilis, *Kl.*; *Fr. Syn. Lent.* p. 10; *Ep.* p. 393. Pileus 2½–3 inches across, deeply umbilicate, virgate, smooth, margin incurved, stem 1 inch high, ending abruptly as if there had been a trace of a ring, above which the space, which is really part of the pileus, is quite smooth and even, marked only with the trace of the gills, which are very narrow and decurrent, very minutely toothed and echinulato-glandulose. Malanipa.

199. Schizophyllum commune, *N.*
Malanipa, Camiguin.

200. Polyporus (Mesopus) xanthopus, *Fr.*
Malanipa, Malamon.

201. P. (Mesopus) grammocephalus, *B.*
Malamon.

202. P. (Pleuropus) affinis, *Nees.*
Malanipa, Malamon.

203. Polyporus (Pleuropus) lucidus, *Fr. Ep.* p. 442.
Malanipa.

204. P. (Pleuropus) gibbosus, *Nees*; *Fr. Ep.* p. 443.
Malanipa.

205. P. (Pleuropus) sanguineus, *Fr.*
Malamon, Camiguin.

206. P. (Anodermei) læticolor, *B.* Pileo dimidiato postice leviter decurrente armeniaco rugoso subtiliter velutino, margine tenui irregulariter lobato; contextu molli cinnabarino, primum armeniaco; hymenio cinnamomeo, margine ochroleuco; poris minutis acie acutis.

Pileus 3 inches wide, 2 long; pores $\frac{1}{72}$ in diameter. Looks at first like a thin state of *Polyporus ulnarius.*

Malamon.

207. P. (Anodermei) ostreæformis, *B.* Imbricatus albidus; pileo dimidiato tomentoso postice innato-fibroso rugoso, margine acuto; hymenio plano; poris angulatis, dissepimentis tenuibus acie integris.

Pilei 1½ inch across, 1 long; pores $\frac{1}{120}$ inch in diameter, substance brittle, rigid when dry.

Malanipa.

208. P. (Placodermei) zonalis, *Tr.*
Malamon.

Var. semilaccatus. Pileo reniformi rigido postice laccato rufo decurrente, antice pallido zonato rugoso; hymenio pallido; poris punctiformibus; contextu pallido.

Pileus 3 inches across, 1 long; pores $\frac{1}{150}$.

Malamon. The species is extremely variable.

209. P. (Placodermei) caliginosus, *B.* Pileo tenui rigido sæpe longe decurrente zonato lineato-rugoso atrobrunneo; margine acuto crenato-lobato; contextu hymenioque ferrugineo; poris minutis.

Pileus 5–6 inches wide, 3½ long; zones narrow, sometimes projecting in a scalariform manner, as if the growth were at times suddenly arrested; pores smaller than in *P. australis,* and not merely punctiform, stratose. In one specimen fixed by the vertex the pileus is still decurrent. Malamon.

210. P. (Placodermei) senex, *Mont.* Very old and cracked.
Malanipa.

211. P. (Placodermei) endotheius, *B.* Pileo ungulato fulvo

pulverulento-velutino; contextu duro sulphureo; hymenio pallide umbrino; poris punctiformibus.

Pileus 2 inches across, 1½ long, 2 high. Malanipa.

Allied to *P. igniarius.* Pileus with two or three obtuse convex ridges.

212. Polyporus (Placodermei) igniarius. Malamon.

213. P. (Placodermei) pectinatus, *Klotzsch, l. c.* p. 485.

Apparently so old as not to show the rhubarb-coloured hymenium. In Klotzsch's original specimens, however, and also in that from Cuba, the old hymenium is brown.

Malamon.

214. P. (Inodermei) caperatus, *B. Ann. Nat. Hist.* x. p. 391.

Malanipa.

215. Trametes conchatus, *B.* Pileo pallide umbrino-ochroleuco sulcato-zonato subtiliter tomentoso; contextu pallido sericeo; poris angulatis umbrinis.

Pileus nearly 6 inches across, 3 long; pores $\frac{1}{48}$ in diameter.

Allied to *T. lactineus*, B.; but the pores are wider and the dissepiments not so rigid and obtuse. They are evidently, when fresh, of a much softer consistence, so that they contract when dry.

Malanipa.

216. T. mollis, *Fr. Hym. Eur.* p. 585.

Malanipa.

217. T. occidentalis, *Fr.*

Malamon.

218. Hexagona crinigera, *Fr. Fung. Guin.* f. 10.

Pores $\frac{1}{12}$–$\frac{1}{6}$ inch in diameter. There is a variety with smaller pores quite devoid of bristles.

Malanipa, Malamon.

219. H. albida, *B.* Disco orbiculari affixa; pileo reniformi leviter sulcato-zonato ruguloso scabro, margine acuto; poris subflexuosis intus scabris pallidis.

Pileus 2½ inch across, 1½ long; pores $\frac{1}{16}$ in diameter.

Intermediate between *Hexagona* and *Dædalea.* Though the pores are flexuous, there is not the slightest tendency to radiate.

Malamon.

220. H. flabelliformis, *B.* Pileo tenui flabelliformi rufulo radiato-lineato subtiliter et sparsim velutino glabrescente; poris demum elongatis amplis setulosis.

Small but distinct. Pores $\frac{1}{18}$ inch in diameter.

221. H. cladophora, B. Pileo primum processibus molaribus rugoso, interstitiis bombycinis, demum læviore scabroso

rufulo, siccato contracto; poris demum elongatis dissepimentis obtusis.

Pileus 2½ inch wide, 1 inch long; pores $\frac{1}{18}$ inch in diameter.

This is a very curious species, and may possibly be nearer allied to *Merulius*.

Malamon.

222. Favolus scaber, B., and var. platyporus, *Journ. Linn. Soc.* xiv. p. 57.

Malamon, Malanipa.

223. Lenzites applanata, *Fr.*

Little Ké.

224. Irpex zonatus, *B. Hook. Lond. Journ.* 1845, p. 168.

Malanipa.

225. Stereum ostrea, *Nees*; *Fr. El.* p. 175.

Malanipa.

226. S. Moselei, *B.* Pileo ex infundibuliformi flabellato subtiliter velutino subzonato cervino, margine pallidiore; stipite e basi parva oriundo opaco pallido; hymenio rufulo.

Pileus about ½ an inch across; stem ¼ inch high; sometimes several spring from the same confluent base; stem occasionally of the same colour with the hymenium.

Malamon, upon sticks.

227. Hirneola rufa, *B.*

Little Ké.

228. Xylaria hypoxylon, *Grev. Fl. Ed.* p. 355.

A minute form with sporidia $\frac{1}{1000}$ inch in diameter.

Malanipa.

Admiralty Islands. March 1875.

229. Agaricus (Pleurotus) scabriusculus, *B.* Conchiformis postice depressus, pileo subtiliter pulverulento-tomentoso demum leviter radiato-plicato; stipite brevissimo laterali cylindrico quandoque applanato; lamellis decurrentibus nec postice porosis integris.

Pileus 1–2 inches wide, an inch or more long, soft and pliant, when dry, of an ochraceous tint.

230. A. (Pleurotus) lachnocephalus, *B.* Pileo excentrico tenui campanulato subtiliter velutino saccharino rufo umbilicato sulcato; stipite cylindrico pulverulento e basi orbiculari albo oriundo; lamellis latiusculis decurrentibus.

About ⅓ inch across; stem ¼ inch high, not 1 line thick.

There is a form with a longer, less excentric stem, which has the appearance of a *Marasmius*.

231. Agaricus (Pleurotus) semisupinus, *B. & Br. Journ. Linn. Soc.* xi. p. 529.

232. Marasmius fulviceps, *B. Hook. Lond. Journ.* 1847, p. 490.

233. M. hispidulus, *B.* Pileo e convexo explanato fulvo hispido; stipite gracili deorsum albo-furfuraceo, sursum primitus subtiliter velutino brunneo; lamellis ventricosis adnatis.

Pileus 2–3 lines across; stems ⅓–½ inch high.

There is also a barren *Marasmius* on *Trichomanes javanicus.*

234. Lentinus hygrometricus, *B.* Pileo infundibuliformi, subtiliter tomentoso lineato, margine exsiccato lobato inflexo; stipite gracili sursum dilatato furfuraceo glabrescente; lamellis angustissimis decurrentibus.

Scattered on blackened dead wood.

Pileus ¾ inch across when expanded; stem 1 inch high, not a line thick.

235. L. villosus, *Fr. Ep.* p. 388.

336. Polyporus (Mesopus) xanthopus, *Fr.*

237. P. (Pleuropus) affinis, *Nees.*

238. P. (Pleuropus) sanguineus, *Fr.*

239. P. (Mesopus) grammocephalus, *B.*

240. P. (Pleuropus) elegans, *Fr. Ep.* p. 440.

241. P. (Pleuropus) rasipes, *B.* Pileo flabelliformi conchato sericeo lineato subvelutino zonato rufo, exsiccato incurvo; stipite brevi applanato hispidulo; hymenio pallido; poris minutis angulatis, dissepimentis tenuibus.

Pileus ¾–1 inch across; stem ¼ inch high, dilated upwards; pores $\frac{1}{200}$ in diameter. Much contracted when dry. The short hairs on the stem sometimes pointing upwards.

242. P. (Pleuropus) stereinus, *B. & C. Linn. Soc. Journ.* x. p. 308.

243. P. (Placodermei) igniarius, *Fr.*

244. P. (Placodermei) australis, *Fr.*

245. P. (Placodermei) exotephrus, *B.* Durus; pileo sulcato-zonato, primitus subtiliter tomentoso glabrescente, margine sulcato prominulo obtuso lobato; contextu ligni colore; poris brunneo-ferrugineis minutis.

Pileus 2¼ inch wide.

Has somewhat the appearance of *P. caliginosus*, B.; but the flesh is pallid, not deeply ferruginous.

246. Polyporus (Placodermei) caliginosus, B.

247. P. (Placodermei) Persoonii, *Fr.*

248. Trametes occidentalis, *Fr.*

249. T. lactineus, *B.*

250. Hexagona affinis, *B.*

251. H. picta, *B.* Pileo dimidiato, postice sanguineo-rufo, antice pallido, lineato-ruguloso plicato, primum pulverulento; hymenio umbrino; poris hic illic margine undulatis.

Pileus $2\frac{1}{2}$-3 inches wide, $\frac{3}{4}$ inch long; pores $\frac{1}{24}$.

252. Laschia tremellosa, *Fr.*

253. Stereum elegans, *Fr. Ep.* p. 545.

254. Thelephora lamellata, *B.*

255. Hirneola polytricha, *Mont.*

256. H. rufa, *B.*

257. Peziza Hindsii, *B.*

"The largest, very thin specimens, from the base of littoral trees, were constantly being bathed and often immersed in sea-water."

Japan[*]. April 28, 1875.

258. Agaricus (Armillaria) edodes, *B.* Pileo carnoso convexo fusco; stipite solido cylindrico e basi crassa orbiculari oriundo; annulo angusto; lamellis postice rotundatis.

Commonly eaten in Japan and exposed for sale in large quantities in the shops. Japanese name *Shi-taki.*

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[*] The following interesting Japanese species have been received from Mr F. V. Dickins:—

a. Agaricus (Pleuropus) guepiniiformis, *B.* Pileo spathulato fisso; strato superiore gelatinoso læticolori croceo; lamellis decurrentibus concoloribus.

About 1 inch long, $\frac{3}{4}$–1 inch wide.

b. Agaricus (Pleuropus) subfunereus, *B.* Pileo spathulato palumbino glabro e stipite candido cylindraceo ramoso oriundo; lamellis tenuibus integris lineato-decurrentibus pallidis.

Pileus $\frac{1}{2}$–$\frac{3}{4}$ inch wide, 1 inch long; stem $\frac{1}{2}$ inch high, 1 line thick.

c. Cantharellus flabellatus, *B.* Pileo flabelliformi, postice elongato, attenuato, radiato-rugoso, tenui; lamellis angustis dichotomis sinuatis.

Pileus $1\frac{1}{2}$ inch across, $2\frac{1}{2}$ long, the attenuated stem-like base sometimes branched.

d. Polyporus (Pleuropus) vernicipes, *B.* Pileo tenui conchiformi pallido zonato crenato subplicato radiato-striatulo zonis umbrinis picto; stipite brevissimo polito poris albis.

Pileus $1\frac{1}{2}$ inch wide, 1 long; pores $\frac{1}{160}$ inch in diameter.

e. P. (Pleuropus) Dickinsii, *B.* Pileo tenui papyraceo spathulato, basi sti-

259. A. (Flammula) micromegas, *B.* Pusillus, pileo e convexo depresso glaberrimo fulvo; stipite tenui obscuriore; lamellis umbrinis ventricosis adnexis vel leviter adnatis.

On decayed wood.

The dried specimens have a very rigid appearance, so as to resemble at first sight some small *Polyporus.*

Pileus ⅓ inch across; stem ½ inch high.

260. Polyporus (Pleuropus) rufescens, *Fr.* A resupinate form.

261. P. (Anodermei) adustus, *Fr. Syst. Myc.* p. 456.

262. P. (Placodermei) portentosus, *B.*

263. P. (Inodermei) subpellucidus, *B.* Imbricatus; pileis tenuibus lobatis sericeo-hirsutis leviter zonatis; hymenio e pallido brunneolo; poris parvis dentatis, dissepimentis cartilagineis.

Pileus $\frac{1}{45}$ inch in diameter.

Attached to the delicate stems of some climbing herb, densely imbricated.

264. Polyporus (Inodermei) elongatus, *B. Hook. Lond. Journ.* 1842, p. 149.

265. P. (Inodermei) versicolor, *Fr.*

266. Dædalea unicolor, *Fr.*

267. Irpex consors, *B.* Imbricato-reflexus; pileis pulverulento-tomentosis mox glabrescentibus leviter zonatis; dentibus compressis umbrinis apice candidis.

Spreading for several inches, and then putting out either at the edges or from the hymenium a multitude of imbricated pilei, which are at first slightly tomentose, but then smooth with one or two zones; teeth umber, compressed, pallid at the tips.

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pitiformi angustato, subtiliter tomentoso glabrescente, hic illic fisso, poris amplis brevibus sinuatis decurrentibus, margine inflexo.

Pileus dirty white, 2½ inches wide, 3 inches long; pores $\frac{1}{18}$ in diameter.

f. P. (Inodermei) pocas, *B.* Pileo reniformi, vertice affixo, leviter zonato, villis radiantibus ornato, postice leviter decurrente, margine tenui ochroleuco acuto sterili; hymenio pallido, postice cinerascente; poris punctiformibus acie obtusissimis.

Pileus 2½ inches long, 1 inch wide. Resembles externally *P. vellereus*, B.; but the pores are very different.

g. Hydnum olidum, *B.* Stipite brevi centrali impolito; pileo zonato floccis lineari-fasciculatis squamoso cinerascente; aculeis elongatis sporisque pallidis.

Pileus 2 inches across; stem collecting leaves by means of its floccose surface; mycelium delicate. Colour at first apparently greenish, but dark cinereous when old. Smell strong, like that of melilot. Agreeing with *H. graveolens* in its smell and dirty-white spores.

268. Stereum contrarium, *B.* Rigidum conchiforme; pileo nigro zonato hispido, hic illic glabrescente, margine pallido, hymenio candido revivescente.

269. Puccinia corticioides, *B. & Br.* Soris confluentibus armeniacis; sporis pellucidis subellipticis, centro demum contractis; pedicellis longissimis. (Pl. II. figs. 7, 8.)

On the stems of some large Graminea, probably *Arundinaria.* Kobê, Nippon. At first appearing under the form of little tawny specks; at length forming apricot-coloured patches, which assume the form of some *Corticium*; pedicels ·007–·008 inch long; spores ·0008–·001 long, globose when young. The specimens do not give sufficient information to trace the whole life-history of certainly the most curious species of the genus.

270. Uromyces deformans, *B. & Br.* In apicibus disciformibus pedunculorum situs; peridio operculiformi; sporis obovatis, margine striatis, albis. (Pl. II. figs. 1–6.)

On the disciform tips of the branchlets of "broussins" in *Thuja dolabrata.* Hakone. Peridium operculiform, shining, pale fawn-coloured; spores springing from a reticulated mass on distinct pedicels, obovate, with a striated border, ·0015–·002 inch long. Curious as this fungus is, there does not seem to be any character by which it can safely be separated from *Uromyces.* The processes on which the *Uromyces* is developed seem rather to be transformations of branchlets than multiplication of fruit-stalks.

271. Ustilago carbo, *Tul.*

Whole crops were often seen affected with the *Ustilago* on a journey along the Tokaido from Kioto to Yokohama, May 1–10.

Tahiti. Sept. 24, 1875.

272. Polyporus (Pleuropus) lucidus, *Fr.*

273. P. (Resupinati) benetostus, *B.* Late effusus, subtus margineque albidus; hymenio spadiceo areolato-fisso; poris minutis.

Widely effused, three or four inches across, at first orbicular, dirty white, with a membranous not byssoid margin. Hymenium the colour of lightly toasted bread, cracked into distinct fascicles of tubes after the manner of *Radulum quercinum*; pores about $\frac{1}{120}$ inch in diameter.

274. Hirneola polytricha, *Mont.* Feb. 1876.

Juan Fernandez. Nov. 13–15, 1875.

275. Xerotus tener, *B. & Br. Journ. Linn. Soc.* xiv. p. 45.

276. XEROTUS BERTIERII, *Mont. Syll.* p. 151.

277. POLYPORUS (ANODERMEI) ADUSTUS, *Fr.*

278. P. (PLACODERMEI) AUSTRALIS, *Fr.*

279. P. (PLACODERMEI) SCANSILIS, *B.* Levis, pileo pulvinato brunneo repetite profunde sulcato-costato coffeato; cuticula tenui rigida; contextu crasso candido fibroso in poros brunneos punctiformes desinente.

Several inches across, attached behind; pileus with prominent ridges all round. The light white substance consists of vertical fibres, which end in the deep umber tubes, whose orifices are punctiform with flat interstices.

280. P. (INODERMEI) HIRSUTUS, *Fr. Ep.* p. 477.

Some of the specimens are very thick and rigid, sometimes nearly smooth, and if there were no intermediate forms might be considered distinct.

281. MERULIUS CORIUM, *Fr. El.* p. 55.

282. CORA PAVONIA, *Fr. Ep.* p. 556.

ADDENDUM.

The subjoined fungi have nothing to do with the 'Challenger' collection; but they are inserted here as gathered in an island situated in nearly the same latitude as one visited by the Expedition.

LORD HOWE'S ISLAND.

Fungi communicated by J. P. Fullager.

α. SCHIZOPHYLLUM COMMUNE, *Fr.*

On decayed Palm-stems.

β. HIRNEOLA POLYTRICHA, *Mont.*

γ. POLYPORUS (PLEUROPUS) FLABELLIFORMIS, *Klotzsch in Linn.* viii. p. 483.

δ. P. (PLEUROPUS) SANGUINEUS, *Fr.*

ε. P. (INODERMEI) ARATUS, *B.* Luteo-olivaceus; pileo dimidiato subimbricato flexili concentrice sulcato nitido glabrato; margine tenuissimo, subtus sterili; contextu concolori; poris parvis rigidiusculis saturatioribus.

Pileus 3½–4 inches wide, 3 inches long, smooth and shining when fully developed, flexible; pores subhexagonal, about $\frac{1}{72}$ inch in diameter. I have a *Polyporus* from Brisbane communicated by

Mr. Broome (*P. luteo-olivaceus*, B. & Br.), which at first sight looks very like this; but instead of being flexible it is hard and coriaceous, while the pores, which are smaller, are deep umber and punctiform.

ζ. P. (PLACODERMEI) FULLAGERI, *B.* Durissimus; pileo pulvinato, postice nigrescenti-brunneo, antice subtiliter velutino rhabarbarino rugoso parce sulcato; vertice elongato; contextu fulvo; poris minutissimis.

Pileus $3\frac{1}{4}$ inches wide, $1\frac{3}{4}$ long, $1\frac{1}{2}$ high, with elongated vertex; pores $\frac{1}{180}$ inch in diameter. Very hard, cracked behind with two or three concentric grooves.

η. HEXAGONA RIGIDA, *B.* Dimidiata, postice decurrens, rigida; pileo umbrino concentrice zonato-sulcato radiato ruguloso glabrescente; margine sulcisque elevatis subtiliter tomentosis; hymenio pallido; poris magnis.

Pileus 3 inches wide, or 6 by confluence, 2 long; pores $\frac{1}{12}$–$\frac{1}{16}$ in diameter. When fully developed quite smooth, cream-coloured within. There is a variety with slightly narrower pores and lobed margin; also a bleached state just intermediate.

DESCRIPTION OF PLATE II.

Fig. 1. Sketch of a spray of *Thuja dolabrata*, with the *Uromyces deformans*, B. & Br., *in situ*. Drawn from a specimen in the Kew Herbarium, and of the natural dimensions.

2. Branchlets from which the *Uromyces* has fallen, but enlarged.
3. One with the peridium perfect; still more enlarged.
4. Branchlets with and without fungus; very considerably magnified.
5. A view of the spores *in situ*; also highly magnified.
6. Two separated spores, still further enlarged. Spores ·0015, ·002 inch long.
7. *Puccinia corticioides*, B. & Br., the plant; of natural size.
8. Spores of the same, greatly magnified. The heads of spores ·0008 to ·001 inch long, globose when young; stalks ·007 to ·008 inch long.

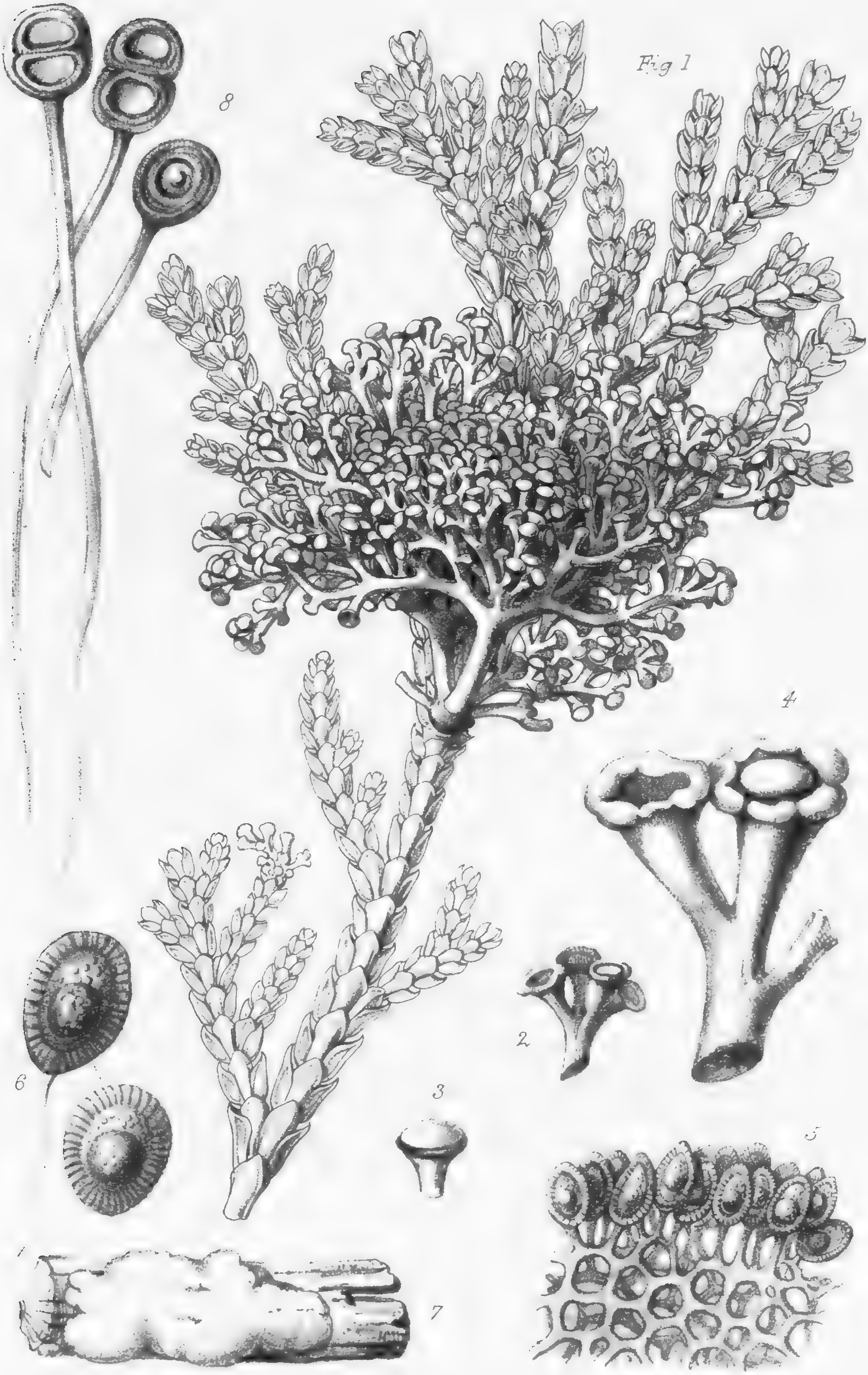
Fig. 1
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J N Fitch, lith. 1-6. UROMYCES DEFORMANS, 7-8 PUCCINIA CORTICIOIDES [illegible]

On the Nature and Mode of Use of the Vegetable Poisons employed by the Samoan Islanders. By the Rev. THOMAS POWELL, F.L.S.

[Read March 15, 1877.]

THE death of that great and good man the late Commodore Goodenough, from the poisoned arrows of the people of Santa, having invested those deadly weapons with so peculiar an interest, I am sure no apology will be required for my presenting to the Linnean Society at one of its Meetings the following particulars upon the subject of poisoned spears and arrows.

I have in the mission establishment here a native of Efat, (Sandwich Island) in the New Hebrides. He is the son of the late chief of the village of Erakor, whose name was Torlie, and who, under the influence of our Samoan evangelists, embraced Christianity in 1845. He then adopted the name of Pomare. This son of his, who is about 35 years of age, obtained from him the following particulars upon the above subject.

Poisoned Spears and Arrows.

The Preparation of the Points.—This, together with the preparation of the poison, was a regular business, and practised only by the initiated. They were distinguished by constantly wearing the *os femoris of a pig* inserted between the arm and the armlet.

When these men heard of any person suffering from some very acute disease indicated by excessive delirium, they watched for his death and then noted the place of his burial. After the lapse of five or six months they would stealthily open his grave and carry thence the large bones of both extremities and the parietal bones of the skull. Of these they made the points of the spears and arrows. Of the femoral bones alone were made the points of the spears. These were prepared by sawing off the upper part below the processes separating the outer condyle, and rubbing down the inner one to a fine point. A wooden handle was then inserted into the upper end and securely fastened with the bark of a twining plant coated with some gummy substance which made it imperishable.

The other bones were sawn into small pieces from an inch to two inches long, and then rubbed down on stones to a very fine point. On account of the convexity of the parietal bones, the points made of them were often very short, in order to have them perfectly straight. These, however, were considered the choicest.

For a saw they used the spines of the large *Echinus*. To make these answer this purpose, two sharp edges were formed on each by rubbing it on stones. Each spine, therefore, was equal to two saws. A goodly number of these were needed, as they soon became dull.

The points, when finished, were inserted into a cane shaft made of a species probably of *Joinvillea*, aad fastened in the same way as the spear-points. They were then ready for the application of the poison.

Preparation of the Poison.—In this preparation a great number of poisonous plants were used—different plants by different persons. Three, however, were used in common.

1. The most virulent of all is called on Efat NA TOTO; *na* is the article, *toto* the noun. This is a large tree, which my informant compares to a *Calophyllum Inophyllum.* Inflorescence abundant, white. Fruit a drupe, about the size of an almond, dark red when ripe, attached to a long peduncle. Every part of the tree is a virulent poison. When cut, a white milk exudes from it, which causes blindness when brought into contact with the eyes. Its sap, when introduced into the circulation, causes death. Of both these effects my informant gave me a memorable illustration, of which his own mother was an eye-witness. She was a Samoan, and one of a party who, with a number of Tongans, were drifted from Samoa in a double canoe to the New Hebrides about fifty years ago. They landed on the western end of Efat and acted the part of freebooters. Again embarking, they proceeded eastward, calling at several villages and acting in the same way, intending finally to make their way back to Samoa. At a place called Mole, near Eraker, the people, expecting a visit from these depredators, prepared for them in a way which they little suspected. They had, as is common in similar places, an enclosure of water on the beach which at low tide served both for drinking and bathing. They pounded a quantity of the leaves of the TOTO previously dried in an oven; and when they saw the canoe coming they threw these pounded leaves into the bathing-place. As soon as the canoe anchored, most of the crew, after native fashion, rushed to the fresh water to drink and to bathe. They were immediately thrown into convulsive agonies: those who only bathed became blind; and those who drank died. The survivors settled

down in the neighbourhood; and, as above intimated, one of the women became the wife of Tahi and mother of my informant, from whom he received this account. The original party numbered about fifty; in 1845, when the mission-ship first visited the island, only *nine* were left.

But to resume. The tree grows near the sea-beach. It is very tenacious of life; for when cut down, shoots soon spring up from the roots. It is probably common in the New Hebrides; my informant had noticed it growing on Aneiteum.

So closely does this description agree in many respects with that given by the late Dr. Seemann, 'Flora Vitiensis,' p. 233, of the *Sinu gaga* of Fiji, *Excæcaria agallocha*, Linn., that it seems highly probable that the TOTO of Efat is identical with it, or is a closely allied species.

2. NA SUAFA is the name of the second of the plants referred to above. Being told that this plant is found in Samoa also, I sent the man for a specimen. It proved to be the PUTU of Samoa, which Professor Oliver has identified as *Tabernæmontana orientalis*, R. Br.

3. NA SOLA. This is the *Fanuamamala* of Samoa, a species of *Carumbium*; but since we have, according to Baron von Mueller, probably three of these, viz. *C. pedicellatum, populifolium*, and *acuminatum*, I cannot say with which the Efat species agrees. They are all, however, considered by the Samoans to possess poisonous qualities, yet to be useful in some diseases.

The leaves of these three plants were carefully picked, the stems and points were nipped off, and they were put into a shed to dry. When quite dry, they were taken in equal parts and reduced to a fine powder in a wooden mortar with a pestle made of the *ara* wood, —that is, the *toa* of the eastern Polynesians (*Casuarina equisetifolia*). To this powder was added a portion, in quantity equal to that of each of the leaves, of very fine scrapings of an old piece of *ara*. The whole was then well rubbed together in the mortar.

The next ingredient was from the animal kingdom. A very long species of *Holothuria*, called in Samoa the *pewa*, being probably *H. vittata*, was brought from the lagoon; the sea-water and the sand were emptied out, and it was exposed to the sun sufficiently long for all the water that remained in its substance to evaporate. It was then put into a leaf of *Calocasia Indica* and placed in the shade till it became a putrid liquid. The bowl having been previously lined with a leaf of the *Calocasia* in order to prevent adhesion to its sides, the powder was again put into it and the liquid added in quantity sufficient to form a thin paste, which was then well stirred with a stick or brush prepared for the purpose.

There was still one more ingredient considered necessary to render the poison sufficiently virulent. In the woods, in the neighbourhood of wasp-nests, were accumulated on the branches of trees small mosses of what the natives considered the wasps' food. It had the appearance of dried earth, and was probably merely accumulations of material for building-purposes. It was called NA LET(=*layt*), which was the name also of the wasp, as in Samoa a species of white ant and its nest are both called *ane*. This substance, "the food of the lĕt," was collected, and a quantity, equal to that of each of the other ingredients, rubbed to a very fine powder in a separate mortar kept for the purpose. The os femoris, the badge of office already referred to, was used as a pestle.

This wasp-earth was considered by the natives the most active of the ingredients, since when convulsions and lock-jaw ensued from the poison, they would say of the person so affected "*Na puatia na lĕt*"—that is, "he is seized by the *layt*."

This fine powder was added to the mixture, stirred in; and the whole was then exposed for a while to the sun in order to evaporate any remaining humidity. To this mixture some were in the habit of adding the juices of various other poisonous plants; but these were not considered absolutely necessary.

The next step was to grate down the flesh of an old cocoa-nut and wring out the milky oily juice, which was added in proper proportion to the mixture. The mass was then stirred frequently for about a month, till it became a cloudy dark oil. It was then put into gourd bottles, which were suspended to the roof of the house. In about twelve months it became consolidated to the consistence of lard and was considered fit for use.

From this account, then, we obtain the following formula for the preparation of

The Poison for Spears and Arrows.

Take, in equal parts, of

the leaves of {
Excæcaria Agallocha,
Tabernæmontana orientalis,
Carumbium pedicellatum?

The fine dust of an old piece of *Casuarina equisetifolia.*
Finely powdered dust of accumulations formed by a species of wasp.
To be well rubbed together.

Add the putrid liquid of *Holothuria vittata,* sufficient to form a thin paste, and evaporate all humidity. Add the expressed juice of an old cocoa-nut; stir frequently for about a month till the mass becomes a dark cloudy oil; bottle and preserve for twelve months, when it will be fit for use.

Application of the Poison to the Points of the Spears and Arrows. —When about to apply the poison to the points a kind of kiln was prepared for smoking them. One hole was made in the ground in a slanting direction, and another perpendicularly to serve as a chimney. In the slanting one was made a fire of the *Casuarina* wood. The spears and arrows already prepared were placed ready at hand. A bottle of the poison was taken down, and a small portion taken out on the point of a stick; this was carefully rubbed on the bone point of the spear or arrow, which was then held over the smoke ascending from the chimney. Having been well smoked, it was carefully placed upon a rack over the common fire-place. A large number were prepared in this way at one time.

When well dried, the point of each arrow was carefully inserted into a dried flower-stalk of *Tacca pinnatifida*; and thus prepared and protected, the arrows were tied in bundles and placed in a quiver formed of one of the cylindrical layers of the trunk of the Banana, and again hung up over the fire-place to keep them dry. They were thus ready for use or for sale whenever needed. It will be observed that from first to last great care was used to exclude humidity. The reason of this may be that humidity destroys the virulence of the poison; and hence the comparative harmlessness of the poison of such arrows as have been obtained as specimens by gentlemen of war-vessels and others.

The points of the spears were carefully preserved from injury in the spathe of the Mountain Plantain (*Musa troglodytarum,* Linn.).

Effects of the Poison and the Means of Cure.—The poison, when taken internally, was always fatal. Hence occasionally a woman when determined to get rid of a hated husband, would scrape off the poison from the point of an arrow, put it in her husband's food, and thus surely effect her purpose. And however much she might feign grief, the symptoms of the sufferer would at once proclaim the cause and the author of his agonies and death; for men never resorted to such means of revenge.

When introduced into the system on the points of spears or arrows, the effects were often diversified. In some instances the local pain would be very severe, followed by general disturbance of the system in two or three days, and ending in convulsions, lock-jaw, and death. If the incisions were in such cases made at an early stage, the patient might recover.

In other instances the effects were more gradual and insidious, causing at first but little local or constitutional disturbance, but gradually inducing fever, convulsions, lock-jaw, and death. The tetanus was one symptom of every fatal case.

There were men who professed a knowledge of antidotes to the poison. When called to a patient, their first care was to guard against every thing which might startle him, as a very slight shock would induce convulsions and lock-jaw, and render the case hopeless. The antidotes were kept a secret by the craft; but Pomare, who had often been wounded, assured his son that his conviction was that he had been saved, not by these antidotes, but by making free incisions in different parts of his body, so as to allow the escape of the poisoned blood.

Upolu, Samoa, Oct. 1, 1876.

NOTICE.

From Vol. IX. the Zoological and Botanical portions of the Journal have been published separately, and each consists of Eight numbers.

The price of each separate number, whether Zoological or Botanical, is 2*s.* to the public, and 1*s.* 6*d.* to Fellows.

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MISSOURI BOTANICAL

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1877.

Systema Iridacearum. By J. G. Baker, Esq., F.L.S.

[Read December 7, 1876.]

One of our greatest wants at the present time in every-day herbarium-work is a key to the genera of Iridaceæ, and a means of ready access to the great mass of scattered Iridaceous figures and literature. We now know in the order about seven hundred species and between sixty and seventy well-marked genera. Nearly all the Iridaceæ inhabit temperate regions, and may be grown successfully in the open air in this country. The order includes several of our most familiar garden genera, as, for instance, *Gladiolus*, *Crocus*, and *Iris*. How it comes that such an order has been so much neglected by systematists, I have never been able to understand. It was one of the few orders of Monocotyledons that were not treated in Kunth's 'Enumeratio;' and leaving out of count Dr. Klatt's papers, which are scattered through several volumes of the 'Linnæa,' for the latest continuous synopsis of the order we must go back to Dietrich's 'Synopsis Plantarum,' published in 1839, and this a mere compilation from other books.

During the first thirty, or perhaps we may fairly say forty, years of the century the order was energetically studied in this country. The principal worker in the field was Gawler, who afterwards changed his name to Bellenden Ker, left England a generation ago, and died at Nice within the last few years. He published, in 1805, in the first volume of König and Sims's 'Annals of Botany,' a paper containing a complete synopsis of genera, with a list of all the species then known. In this paper many of the genera as now admitted were for the first time named and fully characterized. For many years, during the editorship of Dr. Sims, he contributed largely to the 'Botanical Magazine,' and during that time gave figures and descriptions of a large proportion of the Irids then in cultivation, a number many times greater than we possess at the present day. In 1827 he published separately at Brussels a paper entitled 'Genera Iridearum,' in which he gives a synonymic list of all the species then known, and a full description of the thirty genera under which he classifies them.

What I am aiming at in the present paper is to do for 1876 what Ker did for 1827. We now know nearly 700 species, against a little over 300 with which he was acquainted; and I admit 65 genera against his 30. Salisbury studied the order very carefully, and in the first volume of the 'Transactions of the Horticultural Society' gave names to several genera that now stand; but he never characterized them, and his fragmentary 'Genera Plantarum,' issued a few years ago by Dr. J. E. Gray, stops short abruptly at the very beginning of the order. Dean Herbert made a special study of *Crocus*, and published a good many new species and genera of Iridaceæ in the 'Botanical Magazine' and 'Botanical Register.' For the last generation the order has been neglected, and many of the less hardy Cape species which were introduced in the days of Ker and Salisbury have been lost from cultivation.

The only considerable contribution to its literature during the last thirty years is a series of papers by Dr. F. W. Klatt, of Hamburg, which extend from the 31st to the 35th volume of the 'Linnæa.' These, taken together, constitute a general synopsis of the order. They are founded principally upon the Berlin Herbarium; and of the plants for which the author had access to proper material the descriptions are full and clear. But he gives no citation of synonyms; so that if we want to look up the references to any particular plant, these papers do not help us, and we have to fall back upon Ker's work of 1827. And not only has Dr. Klatt omitted many species which were known at the date when he wrote, but he has left, I think, great room for improvement in the making of a key to the genera and their general arrangement and nomenclature.

What I propose therefore to undertake now is to give, in the first place, a description of the genera, referring, of course, to their proper places, so far as I can judge, the numerous generic synonyms which by this time have accumulated, and constructing a general key to the tribes and genera upon the model of those which have been found so practically useful in Bentham and Hooker's 'Genera Plantarum,' and, secondly, to give under each genus a synonymic list of the known species with a brief note of their geographical distribution. The general plan of my paper is, as I said before, to do for the order in 1876 what Ker did in 1827. I have added to the scope of Ker's plan only by giving the preliminary key to the tribes and genera, and by including the geographical element. On the other hand, I have worked upon a materially smaller scale as regards synonyms, because, except in the case of figures, I have only cited the original authority for each name, and have omitted all reference to pre-Linnean books.

Without at all attempting to trace in detail the range of character which the different organs present, it will make matters more clear if I say a few preliminary words under each as to the characters for tribes and genera which they furnish.

Rootstock and Root.—In respect of rootstock, just as in Liliaceæ, the order falls into two unequal halves—a bulbous, and a non-bulbous series: there are 48 genera of the former, 17 of the latter. As a general rule, the non-bulbous differ tangibly from the bulbous genera in floral characters; but this is not invariably the case. For instance, the bulbous *Geissorhiza* answers perfectly to the non-bulbous *Schizostylis*, the bulbous *Xiphion* to the non-bulbous *Iris.* In each series we have a wide range of variation in root-character, so that in fact we get within the bounds of the order nearly every type of Monocotyledonous root and rootstock represented. In many species of *Sisyrinchium* we see a dense tuft of slender adventitious root-fibres without any rootstock, as in the ordinary grass type. In *Sisyrinchium graminifolium* and *pachyrhizum* these fibres become fleshy and cylindrical. The short-creeping, thick, firm rhizome of the ordinary *Irises* is familiar to every one. In *I. arenaria* this becomes a slender wide-creeping rhizome similar to that of *Carex arenaria.* The typical tunicated bulb is very common. In *Crocus* and *Moræa* corms with tunics of various texture are abundantly represented. In *Ferraria* we have a large irregularly shaped tuber like that of *Eriospermum.* The character of the bulb- or corm-tunics sometimes runs through a genus with great uniformity, and sometimes, as in *Crocus*, varies greatly in closely allied species, and furnishes one of the best specific characters. Nearly all the non-bulbous Irids are perennials; but we have an instance of an annual fibrous-rooted species in *Sisyrinchium micranthum,* which is one of the few plants of the order which have become naturalized far away from their original home.

Stem.—Three small Cape genera (*Witsenia* and its neighbours) are decided shrubs with acutely-angled stems, densely clothed up to the inflorescence with distichous, amplexicaul, linear leaves. All the other genera are herbaceous; *Crocus*, *Galaxia*, and *Sy-*

ringodea are acaulescent, with a very short underground scape. The habit so common in Liliaceæ and Amaryllidaceæ, leaves all congested in a basal rosette, and a produced, naked scape supporting the inflorescence, is rare here. The common type is a produced, terete or acutely-angled stem with a few, more or less reduced leaves intervening between the base and the inflorescence. In *Sisyrinchium* the difference between a terete and flat stem separates a large and difficult genus into two unequal halves. In *Marica* the stem is not merely flat, but as broad as the leaves and quite leaf-like in appearance, and produced unaltered beyond the single lateral cluster or corymb.

Leaf.—The leaves of Iridaceæ are always either membranous or coriaceous in texture, never fleshy; so that in appearance and persistence they are more like those of Cyperaceæ than the other two great bulbous orders. Very few Irids are destitute of produced leaves, or have the leaves developed at a different time to the flower. To the first, *Bobartia aphylla*, to the second, *Crocus nudiflorus* and *speciosus* are exceptions. The common type in the order of leaf-form and arrangement, a distichous basal rosette of linear or ensiform leaves so compressed that they clasp one another by their inner edges at the lower part, occurs abundantly, in company with all the leading types of perianth-structure, for instance, alike in *Ixia*, *Iris*, and *Gladiolus*. Narrow, deeply channelled, multifarious leaves in a dense basal rosette run uniformly through some genera, as *Crocus* and *Romulea*. Next to the distichous-flabellate, the most striking type in the order is the flat strongly plicate leaf, usually narrowed, either symmetrically or obliquely, into a sort of petiole, a type which nearly always runs without exception through the genera in which it occurs, and is represented at the Cape by *Babiana*, and in Tropical America by *Tigridia*, *Eleutherine*, and several other small genera. There are bulbilli developed on the axils of the leaves in species of *Sparaxis*, *Hesperantha*, and *Moræa*.

Inflorescence and Bracts.—Iridaceæ also agree with Cyperaceæ and Gramineæ, and differ from Liliaceæ and Amaryllidaceæ, in the fact that in inflorescence and bracts we get some of the best characters for groups and genera. Here, as in the structure of the perianth, we have in the order three well-marked types, viz.:—

1. Spathe essentially one-flowered and two-valved. Flowers

comparatively persistent, nearly always arranged in centripetal spikes, which are often panicled. To the normal form of this type, of which we have examples in *Gladiolus*, *Ixia*, *Watsonia*, *Sparaxis*, and *Antholyza*, about one third of the genera of the order belong. We have this type running into abnormal forms in *Lapeyrousia*, in which the flowers are arranged in corymbose panicles, but in some species they run into spikes at the end of the branches—and in *Romulea* and *Spatalanthus*, in which the flowers are often solitary or, if more than one, umbellate. Taking the three primary subdivisions of the order founded on perianth-structure, we find this type of inflorescence runs through all the *Gladioleæ*, includes about half of the *Ixieæ*, and is not represented at all in the *Irideæ* proper. It is correlated with flabellate-distichous leaves, the absence of a peduncle inside the bract, the presence of a distinct tube to the perianth above the ovary, a perigynous insertion of the stamens, and a comparatively firm texture and long duration in the flower. In this type the shape and texture of the two bracts of the spathe vary greatly from genus to genus, and usually run through a genus with great uniformity. As illustrations of peculiar forms, I may mention the short, oblong-truncate type, membranous in texture, with two or three cusps at the tip, which marks *Ixia*, *Morphixia*, and *Tritonia*, and the membranous lacerated spathe-valve conspicuously variegated with brown and white, which marks at a glance *Sparaxis* from all the other Ixioid, and *Synnottia* from all the other Gladioloid genera.

2. Flowers one or many to each bulb or corm, sessile in the centre of a multifarious rosette of generally narrow leaves, each furnished with a tight-clasping, long, membranous spathe of its own, divided at the top into one or two valves, and these, if the flower be more than one, not enclosed in a general bract of firm texture, as in the next group: examples—*Crocus*, *Galaxia*, *Syringodea*. The flowers in this type are always regular and upright, with a long slender tube, and the leaves never flabellato-distichous.

3. Flowers essentially clustered, the bracts superposed, the two outer ones generally green and firm in texture at the flowering-time, the inner ones membranous. The number of flowers in a cluster varies greatly. Rarely, as in some of the Irises, it runs down to one, in which case there are no membranous bracts inside the two outer green ones. Often the number

of flowers in a cluster is from three to six, as in *Tigridia* and *Rigidella*; but sometimes, as in *Aristea* and *Libertia cærulescens*, it runs up to twenty or thirty. The clusters are sometimes solitary, and in that case may either be terminal or lateral as regards the main axis of the stem. If more than one, they usually form corymbs, but sometimes, as in one section of *Sisyrinchium*, only a compound spike. Taking the divisions of the order as founded on perianth-structure, this type includes all the *Irideæ* proper, about half the *Ixieæ*, but none of the *Gladioleæ*—as a whole, more than half the genera of the order. The flowers are more fugitive than in the solitary-flowered, spicate type, and usually stalked within the spathe-valves; and the flowers in a cluster expand in succession, beginning with the lowest, the pedicels elongating so as to push up the limb above the level of the cluster of bracts. The limb often expands only for a few hours in the middle of the day, and, after once closing, does not open again. We have examples of this type of inflorescence, in the Old World, in *Iris*, *Patersonia*, and *Aristea*; and all the American genera, such as *Sisyrinchium*, *Marica*, *Tigridia*, and *Cypella*, belong to it exclusively. As the outermost flower is the first to expand, it would seem at first sight as if these clusters of flowers represented one of the Gladioloid spikes congested; but Mr. Bentham has lately pointed out ('Flora Australiensis,' vol. vi. p. 399) that they really represent congested, unilateral cymes—the pedicel of the first flower being not in the axis of the first bract, but opposed to the second bract with the rest of the cluster between them, the third bract placed on the same side as the first with the second flower opposed to it, and so on to the end. That such is the case it is often easy to see in *Iris*; but frequently the clusters are so excessively congested that it is difficult to make out their true character. With this type is correlated either a long, clavate ovary, or the presence of a pedicel inside the bract; and it is to this that the epigynous stamens, ovaries protruded at the top from the perianth-tube, and (except in *Babiana*) the plicate leaves are restricted; and in this type there is much less variation in the form and texture of the bracts that, under the centripetal spicate type and special forms of bract, are not characteristic of particular genera.

Perianth.—We get within the bounds of the order three distinct types of structure, viz.:—

1. A regular perianth, with a straight tube and symmetrical

limb, in which all the six divisions are alike in shape and direction, correlated with symmetrical stamens spreading from the axis in the same direction as the perianth-segments which they subtend—as in *Crocus* and *Ixia*.

2. A regular perianth with stamens as in the last type, but the three inner segments decidedly different in shape, and often in direction, from the three outer—as in *Iris* and *Tigridia*.

3. An irregular perianth with a more or less decidedly arching tube and segments of the same row different in shape and direction, correlated with stamens unilateral and arching in the expanded flower—as in *Gladiolus* and *Montbretia*.

This difference in perianth-structure furnishes, in my view, the best primary subdivision of the order for systematic purposes. It is a difference which is both important from a structural point of view and easy of application; and there is the advantage that each of the three groups thus formed contains a considerable number of genera. Out of 65 genera in the order, 32 belong to the first, 20 to the second, and 12 to the third type. The principal difficulty in its practical application is, that, if we look at perianth-structure alone, it is difficult to draw the line between the first group and the third; but if the direction of the stamens be attended to, the difficulty almost entirely disappears. As I have already indicated, these three types of perianth-structure, to a large extent, run parallel with the three types of inflorescence. All the 12 Gladioloid genera have the spicate, centripetal inflorescence; all the 20 Euiroid genera have the congested, cymose inflorescence; but in the 32 Ixioid genera all the three types of inflorescence are shown. For the rest there is little about the perianth that need be alluded to here. Even in the group where the two rows of segments are dissimilar, the outer row is always thoroughly petaloid in texture. The difference between the absence or presence of a tube above the ovary sometimes occurs in plants otherwise very closely allied, and cannot, I think, be regarded as a constant mark of genera. The distinct beard of strong hairs that runs down the claw of the outer segments to form a cushion for the stamens in one large section of *Iris* is remarkable; but in another section of *Iris*, as also in species of *Moræa* and *Vieusseuxia*, the claw is clothed with a finer, more diffused cushion. In another section of *Iris* the claw of the outer segments shows a petaloid crest; and in several of the American

Irideæ the three inner segments are permanently convolute,—all arrangements probably in some way connected with fertilization, the import and mode of action of which have still to be worked out.

Stamens.—In the anther throughout the order there is no material difference in structure; neither can we regard the difference between the epigynous and perigynous insertion of the stamens as here of much account, as one slides into the other very gradually. The three stamens, whatever may be their direction in the expanded flower, are always inserted opposite the outer segments of the perianth. In the Australian genus *Diplarrhena* the three filaments are unequal in length, and one of the anthers is abortive. In one solitary instance, for a typical Iridaceous plant (*Eleutherine anomala*) Herbert has recorded the presence of six stamens; but it has never been seen again, and may perhaps have been a monstrosity of the common American *Eleutherine plicata.* Mr. Bentham regards as an anomalous member of Iridaceæ the Australian genus *Campynema,* which has always six stamens. I have spoken already of the different direction of the stamens in the expanded flower, and how in this respect we get two well-marked types correlated with the shape of the perianth. The three filaments, when free, never become dilated and petaloid; but in a considerable number of Iridaceæ the stamens are more or less decidedly monadelphous; and for this reason, in the old books, the order is separated out under two Linnean classes far removed from one another. In a small number of genera, such as *Tigridia, Vieusseuxia,* and *Galaxia,* the filaments are completely and thoroughly monadelphous; and in a large number, such as *Crocus* and *Gladiolus,* they are completely and unmistakably free. But in other genera, well marked by habit, inflorescence, and perianth-characters, such as *Sisyrinchium* and *Libertia,* we get very various degrees of union in plants thoroughly uniform in other points. *Ixia,* a well-marked triandrous generic type, embracing wide specific diversity, has two monadelphous representatives, *Ixia monadelpha* and *curta.* *Romulea,* a genus with 36 triandrous species, with a habit peculiarly its own, has a monadelphous analogue in the single species on which Sweet founded his genus *Spatalanthus.* So that, as a whole, we must say that triandrous pass gradually into the monadelphous Iridaceæ along several lines of junction.

Pistil.—In the ovary there is no material difference in the order, except that in the monotypic genus *Hermodactylus* the three placentas are parietal, and the ovary consequently one-celled. The ovules in each cell are always more than one and superposed. In style and stigma there is a very wide variation within the bounds of the order. We can always trace out three distinct style-branches. Sometimes, as in most of the Euirideæ, these are opposite to the stamens, and consequently to the three outer segments of the perianth; but in another large section of the order, as in *Sisyrinchium*, *Libertia*, and *Patersonia*, the style-branches are alternate with the stamens, and consequently opposite to the three inner segments of the perianth. In *Aristea* the three branches are mere cusps; but, as a rule, they are of considerable length. Sometimes they are subulate, and then may be either entire or more or less deeply forked. A common type is that of *Gladiolus*, in which the stigmas are represented by small, flat, oblanceolate, petaloid expansions. We have an extreme type in the large, petaloid, crested style-branches of *Iris* and *Moræa*. As a whole, we may safely say that some of the best characters of genera are taken from these organs; and, as a rule, it seems that we may safely hold a material difference in style as the mark of a distinct genus, although in *Crocus* we get a wide range of diversity in plants otherwise very near to one another.

Fruit and Seeds.—The fruit is always capsular, with loculicidal dehiscence. In some cases, as for instance, *Tigridia*, *Rigidella*, and *Herbertia*, the top is protruded beyond the perianth-tube, and this leaves a distinct free operculum at the top of the capsule, at the bottom of which, at any rate temporarily, the dehiscence stops. The seeds are generally angular; and in those genera in which they are typically discoid we get species in which the discoid character is lost. *Gladiolus segetum*, with globose seeds, is very difficult to distinguish from *G. byzantinus*, in which they are as flat as in a tulip. *Iris* and *Antholyza* are genera in which we get a very individualized type of flower in combination with seeds of a very different shape. So that for purposes of systematic distinction the seeds in the order are not readily available. The testa in the order differs materially in colour and texture, and needs greater study of fresh specimens than I have been able to give. In embryo and albumen I know of no material difference within the bounds of the order.

Bounds of the Order.—Unlike the Liliaceæ and Amaryllidaceæ, Iridaceæ is one of the most strictly limited of natural orders. The only genus about which there can be any doubt as to whether it should be included in the order or not is *Campynema*, which has an inferior ovary, six stamens with extrorse anthers, melanthoid leaves, and a tuft of fleshy root-fibres. It was placed by Brown in Melanthaceæ, by Mueller in Hypoxidaceæ, but in Mr. Bentham's view is better regarded as an anomalous *Irid.*

Geographical Distribution.—As I am giving a table showing the distribution of each genus, it is not needful to say much on this head. The great concentration of the order is at the Cape, where we get 312 out of 698 species. Out of 65 genera, 25 are exclusively Cape and 7 are mainly Cape plants, but are feebly represented in Tropical Africa. Of the three great subdivisions of the order, the Gladioleæ are confined to the Old World, the other two common to both the Old and the New. Although Europe comes next to the Cape in number of species, it has only one endemic genus (*Hermodactylus*), and all its other species belong either to *Crocus* and *Xiphion* (which it shares with Temperate Asia), to *Iris* (which has the widest dispersion of any genus of the order), or to *Gladiolus*, *Romulea*, and *Moræa* (which it shares with the Cape and Tropical Africa). The 56 Tropical-African species are outwandering representatives of the great Cape genera. Australia has two endemic genera (*Patersonia* and *Diplarrhena*), a single *Iris*, and *Orthrosanthus* and *Libertia* (which it shares with Tropical America). Out of 21 American genera, 17 are endemic. Out of a little over 100 American species, all but 2 are endemic. Very few of the species occur in more than one of the climatic districts. The two most widely dispersed plants of the order are *Sisyrinchium Bermudianum*, which is common to Ireland and North America, and *Iris sibirica*, which extends from Sweden and France to Japan, and just touches North-west America. There are 6 plants which I have treated as species which are known in gardens only.

Table showing the Distribution of the Genera of Iridaceæ.

Genera.	Europe and North Africa.	Temperate Asia.	Temperate North America.	Tropical Africa.	Tropical Asia and Polynesia.	Tropical America.	Cape.	Australia and New Zealand.	Temperate South America.
Crocus	32	27							
Syringodea	...	...	...	...	...	...	3		
Romulea	16	2	...	2	...	...	19		
Ixia	...	...	...	...	...	...	18		
Streptanthera	...	...	...	...	...	...	2		
Geissorhiza	...	...	...	2	...	...	24		
Hesperantha	...	...	...	...	...	...	12		
Morphixia	...	...	...	...	...	...	9		
Sparaxis	...	...	...	...	...	...	3		
Dierama	...	...	...	...	...	...	2		
Hexaglottis	...	...	...	...	...	...	2		
Eleutherine	...	...	...	...	...	2			
Calydorea	...	...	1	...	...	4			
Cardiostigma	...	...	...	...	...	1			
Nemastylis	...	...	3						
Galaxia	...	...	...	...	...	...	2		
Spathalanthus	...	...	...	...	...	...	1		
Homeria	...	...	...	...	...	...	5		
Ferraria	...	...	...	...	...	...	6		
Gelasine	...	...	...	...	...	2			
Chlamydostylus	...	...	...	...	...	5			
Schizostylis	...	...	...	...	...	...	2		
Witsenia	...	...	...	...	...	...	1		
Nivenia	...	...	...	...	...	...	2		
Klattia	...	...	...	...	...	...	1		
Aristea	...	...	...	3	...	...	12		
Orthrosanthus	...	...	...	...	...	2	...	5	
Belemcanda	...	1							
Bobartia	...	...	...	...	...	...	4		
Tapeinia	...	...	...	...	...	...	...	...	1
Sisyrinchium	1	...	3	...	1	28	...	...	20
Xiphion	7	9					...		
Sphenostigma	...	...	...	...	...	1	...		
Cipura	...	...	...	...	...	2	...		
Alophia	...	...	1	...	...	2	...		
Lansbergia	...	...	...	...	...	7	...		
Hesperoxiphion	...	...	...	...	...	2			
Phalocallis	...	...	...	...	...	1			
Cypella	...	...	...	...	...	1		...	2
Moræa	1	1	...	9	...	...	25		
Vieusseuxia	...	...	...	...	...	..	11		
Herbertia	...	...	2	...	...	4	...	...	1
Totals	57	40	10	16	1	64	166	5	24

Genera.	Europe and North Africa.	Temperate Asia.	Temperate North America.	Tropical Africa.	Tropical Asia and Polynesia.	Tropical America.	Cape.	Australia and New Zealand.	Temperate South America.
Brought forward	57	40	10	16	1	64	166	5	24
Rigidella	...	...	...	...	...	3			
Hydrotænia	...	...	...	...	...	1			
Tigridia	...	...	...	...	...	6	...	...	1
Iris	28	41	15	1	...	...	2	1	
Hermodactylus ...	1								
Diplarrhena	...	...	...	...	...	...	...	2	
Marica	...	...	...	...	...	8			
Patersonia	...	...	...	...	...	...	...	19	
Libertia	...	...	...	...	...	...	...	4	4
Anomatheca	...	...	...	2	...	...	2		
Lapeyrousia	...	...	...	7	...	...	12		
Watsonia	...	...	...	1	...	...	12		
Acidanthera	...	...	...	3	...	..	7		
Homoglossum ...	...	...	...	...	...	...	3		
Tritonia	...	...	...	...	...	...	9		
Freesia	...	...	...	...	...	...	2		
Babiana	...	...	...	...	...	...	19		
Melasphærula ...	...	...	...	...	...	...	1		
Montbretia.........	...	...	...	...	...	...	14		
Synnottia	...	...	...	...	...	...	3		
Gladiolus	8	8	...	4	...	...	51		
Antholyza	...	...	...	2	...	...	9		
Totals	94	89	25	56	1	82	312	31	29

Table of the Genera of Iridaceæ.

	Ixieæ.		Irideæ.		Gladioleæ.	
Bulbs with free stamens.	Crocus	51	Xiphion	16	Anomatheca	4
	Syringodea	3	Sphenostigma ...	1	Lapeyrousia	18
	Romulea	36	Cipura	2	Watsonia	13
	Ixia	18	Alophia	3	Acidanthera	10
	Streptanthera ...	2	Lansbergia	7	Homoglossum ...	3
	Geissorhiza	26	Hesperoxiphion..	2	Tritonia	9
	Hesperantha......	12	Phalocallis	1	Freesia	2
	Morphixia.........	9	Cypella	2	Babiana...........	19
	Sparaxis	3			Melasphærula ...	1
	Dierama	2			Montbretia	14
	Hexaglottis	2			Synnottia	3
	Eleutherine	2			Gladiolus	87
	Calydorea	8			Antholyza	11
	Cardiostigma ...	1				
	Nemastylis	3				
		178		34		194

Table of the Genera of Iridaceæ (continued).

	Ixieæ.		Irideæ.		Gladioleæ.
Bulbs with monadelphous stamens.	Galaxia	2	Moræa	35	
	Spatalanthus	1	Vieusseuxia	11	
	Homeria	5	Herbertia	6	
	Ferraria	6	Rigidella	3	
	Gelasine	3	Hydrotænia	1	
	Chlamydostylus	5	Tigridia	6	
		22		62	
Non-bulbs with free stamens.	Schizostylis	2	Iris	80	
	Witsenia	1	Hermodactylus	1	
	Nivenia	2	Diplarrhena	2	
	Klattia	1	Mariea	9	
	Aristea	15			
	Orthrosanthus	7			
	Belemcanda	1			
	Bobartia	4			
		33		92	
Non-bulbs, monadelphous stamens.	Tapeinia	1	Libertia	8	
	Sisyrinchium	48	Patersonia	19	
	Solenomelus	7			
		56		27	
Total.	Genera 32, species 289.		Genera 20, species 215.		Genera 13, species 194.

CONSPECTUS TRIBUUM ET GENERUM.

Series I. Ixieæ. Perianthium regulare, segmentis interioribus exterioribus consimilibus, staminibus æquilateralibus.

Tribus 1. Croceæ. Herbæ bulbosæ staminibus liberis.

* *Spathæ unifloræ. Flores haud spicati.*

1. **Crocus.** Acaulis, spathæ valvis angustis elongatis membranaceis. Perianthii tubus longissimus. Stigmata integra vel multifida. *Europa, Asia occidentalis, Mauritania.*

2. **Syringodea.** Acaulis, spathæ valvis angustis elongatis membranaceis. Perianthii tubus elongatus. Stigmata integra cuneata. *C. B. Spei.*

3. **Romulea.** Caulescentes, floribus solitariis vel paucis corymbosis. Spathæ valvæ lanceolatæ, exterior viridis. Perianthii tubus brevissi-

mus. Stigmata bifida ramis brevibus subulatis. *Regio Medit., Africa tropicalis, C. B. Spei.*

** *Spathæ unifloræ. Flores spicati.*

4. IXIA. Perianthium rotatum, tubo cylindrico. Spathæ valvæ breves membranaceæ, apice 2–3-dentatæ. *C. B. Spei.*

5. STREPTANTHERA. Perianthium rotatum, tubo brevissimo cylindrico. Spathæ valvæ membranaceæ brunneo-punctatæ apice laceratæ. *C. B. Spei.*

6. GEISSORHIZA. Perianthium infundibulare, tubo cylindrico. Spathæ valvæ oblongæ virides integræ. Stylus ex tubo protrusus, stigmatibus brevibus subulatis. *C. B. Spei, Madag., Montes Cameroon.*

7. HESPERANTHA. Perianthium infundibulare, tubo cylindrico. Spathæ valvæ oblongæ virides integræ. Stylus ex tubo vix protrusus, stigmatibus magnis subulatis. *C. B. Spei, Abyssinia.*

8. MORPHIXIA. Perianthium infundibulare, tubo cylindrico brevi vel longo, collo turbinato. Spathæ valvæ breves membranaceæ, apice 2–3-dentatæ. *C. B. Spei.*

9. SPARAXIS. Perianthium infundibulare, tubo brevi. Spathæ valvæ membranaceæ brunneo-punctatæ, apice laceratæ. Folia brevia membranacea. *C. B. Spei.*

10. DIERAMA. Perianthium infundibulare, tubo brevi. Spathæ valvæ magnæ pallidæ membranaceæ parce laceratæ. Folia dura elongata. *C. B. Spei.*

*** *Spathæ 2–plurifloræ.*

11. HEXAGLOTTIS. Capensis, perianthii tubo producto, spathis sessilibus spicatis.

Americanæ, perianthii tubo nullo, spathis pedunculatis, foliis sæpissime plicatis.

12. ELEUTHERINE. Stigmata 3 integra subulata. Flores albi. *Amer. tropicalis.*

13. CALYDOREA. Stigmata 3 subulata apice emarginata. Flores cærulei, raro lutei. *Amer. trop.*

14. CARDIOSTIGMA. Stigmata 3 plana obcordata. Flores cærulei. *Mexico.*

15. NEMASTYLUS. Stigmata 6 elongata subulata. Flores cærulei. *Amer. bor.-orientalis.*

Tribus 2. GALAXIEÆ. Herbæ bulbosæ, staminibus coalitis.

* *Capenses, stigmatibus plus minus applanatis.*

16. GALAXIA. Acaulis, floribus sessilibus solitariis, tubo producto filiformi. Stigma peltatim trilobatum.

17. SPATALANTHUS. Acaulis, floribus solitariis pedunculatis, tubo brevi infundibulari. Stigmata ligulata emarginata.

18. HOMERIA. Caulescens, floribus paniculatis, ad spatham pluribus. Tubus nullus. Stigmata ligulata petaloidea 2-cristata. Bulbus tunicatus.

19. FERRARIA. Caulescens, floribus paniculatis, ad spatham pluribus. Stigmata petaloidea bifida penicillata. Limbus basi cupularis. Cormus tuberosus.

** *Americanæ, styli ramis subulatis.*

20. GELASINE. Styli rami 3.

21. CHLAMYDOSTYLUS. Styli rami 6.

Tribus 3. ARISTEÆ. Herbæ vel frutices haud bulbosæ, staminibus liberis.

* *Herbæ, floribus spicatis ad spatham solitariis.*

22. SCHIZOSTYLIS. Stylus ex tubo haud protrusus, stigmatibus magnis subulatis. *C. B. Spei.*

** *Frutices, spathis* 1–2-*floris, ramis ancipitibus distiche foliatis.* (*Capenses.*)

23. WITSENIA. Perianthium viridulum infundibulare, lobis brevibus conniventibus, exterioribus dorso flavo-tomentosis. Antheræ magnæ lanceolatæ, filamentis brevibus complanatis.

24. NIVENIA. Perianthium cæruleum hypocrateriforme, lobis patulis glabris, tubo cylindrico æquilongis. Antheræ minutæ oblongæ, filamentis brevissimis subulatis.

25. KLATTIA. Perianthium cæruleum, lobis glabris longissimis erectis anguste lingulatis longe unguiculatis. Antheræ magnæ lanceolatæ, filamentis longissimis subulatis.

*** *Herbæ, spathis multifloris.*

26. ARISTEA. Caulis foliosus. Inflorescentia corymbosa, raro capitata. Perianthium cæruleum, tubo brevissimo. Stylus productus apice obscure tricuspidatus. *C. B. Spei, Madag., Abyssinia, Angola.*

27. **ORTHROSANTHUS.** Caulis parce foliosus. Inflorescentia capitata corymbosa. Perianthium cæruleum, tubo brevissimo. Stylus brevissimus, ramis productis subulatis. *Australia, Amer. tropicalis.*

28. **BELEMCANDA.** Caulis parce foliosus. Inflorescentia corymbosa. Perianthium rubrum punctatum, tubo nullo. *China.*

29. **BOBARTIA.** Caulis nudus. Inflorescentia capitata. Perianthium luteum, tubo nullo. *C. B. Spei.*

Tribus 4. SISYRINCHIEÆ. Herbæ haud bulbosæ, staminibus coalitis.

30. **TAPEINIA.** Spathæ multifloræ, valvis 2. Tubus nullus. *Chili, Patagonia.*

31. **SISYRINCHIUM.** Spathæ multifloræ, valvis pluribus. Tubus nullus. *America tota, Hibernia.*

32. **SOLENOMELUS.** Spathæ multifloræ, valvis pluribus. Tubus productus infundibularis vel filiformis. *Andes, Chili, Patagonia.*

Series II. IRIDEÆ. Perianthium regulare, segmentis interioribus exterioribus dissimilibus, staminibus æquilateralibus.

Tribus 5. XIPHIONIDEÆ. Herbæ bulbosæ, staminibus liberis.

* *Segmenta interiora plana.*

33. **XIPHION.** Stigmata magna petaloidea quadrata, cristis 2 petaloideis instructa. Folia plana. *Regio Mediterranea, Oriens.*

34. **SPHENOSTIGMA.** Stigmata parva integra cuneata denticulata. Folia plicata. *Brasilia.*

35. **CIPURA.** Stigmata parva oblonga integra petaloldea. Folia plicata vel raro teretia. *Amer. trop.*

** *Segmenta interiora convoluta.*

36. **ALOPHIA.** Stigmata bifida, ramis subulatis recurvatis. Folia plicata. *Texas.*

37. **LANSBERGIA.** Stigmata clavata apice emarginata. Folia teretia vel plana. *Amer. trop.*

38. **HESPEROXIPHION.** Stigmata magna petaloidea quadrata, cristis tribus petaloideis, intermedia minuta. Folia plicata. *Amer. trop.*

39. **PHALOCALLIS.** Stylus apice cyathiformis, stigmatibus cristis 2 deltoideis transversalibus præditis. Folia plicata. *Brasilia merid.*

40. **Cypella.** Stylus apice cyathiformis, ramis stigmatosis bifidis, ramulis cristis tribus subulatis inæqualibus præditis. Folia plicata. *Brasilia.*

Tribus 6. **Tigridieæ.** Herbæ bulbosæ, staminibus coalitis.

* *Styli rami petaloidei, apice 2-cristati.*

41. **Moræa.** Filamenta sursum libera, deorsum coalita. Perianthii segmenta interiora exterioribus æquilonga. *C. B. S., Africa tropicalis, Regio mediterranea.*

42. **Vieusseuxia.** Filamenta prorsus coalita. Perianthii segmenta interiora minuta unguiculata. *C. B. Spei.*

** *Styli rami subulati vel anguste applanati.*

43. **Herbertia.** Styli rami apice emarginati vel integri. Segmenta interiora parva plana. *America trop. et subtrop.*

44. **Rigidella.** Styli rami profunde furcati. Segmenta interiora minutissima occulta. *Mexico et Guatemala.*

45. **Hydrotænia.** Styli rami profunde furcati. Segmenta interiora magna plana rhomboidea. *Mexico.*

46. **Tigridia.** Styli rami profunde furcati. Segmenta interiora exterioribus multo minora convoluta. *Amer. trop.*

Tribus 7. **Euirideæ.** Herbæ rhizomatosæ, staminibus liberis.

* *Segmenta interiora haud convoluta.*

47. **Iris.** Stamina 3 perfecta. Ovarium 3-loculare. Stigmata quadrata petaloidea apice cristis 2 magnis petaloideis instructa. Rhizoma repens, sæpissime crassum. *Regio temp. præsertim zonæ borealis.*

48. **Hermodactylus.** Stamina et stigmata *Iridis.* Ovarium 1-loculare, placentis 3 parietalibus. Rhizoma digitatum. *Regio mediterranea.*

49. **Diplarrhena.** Stamina inæqualia arcuata, 1 castratum. Segmentum supremum interius leviter fornicatum. Ovarium et stigmata *Iridis. Australia.*

** *Segmenta interiora convoluta.*

50. **Marica.** Scapus late applanatus. Stigmata multifida. *Amer. trop.*

Tribus 8. **Patersonieæ.** Herbæ haud bulbosæ, staminibus sæpissime coalitis.

51. **Patersonia.** Perianthii tubus productus; segmenta interiora minuta. Stigmata parva, petaloidea. *Australia.*

52. **Libertia.** Perianthii tubus nullus; segmenta interiora magna. Stigmata subulata. *Australia, Nov. Zeal., Amer. austral. temp.*

Series III. Gladioleæ. Perianthium irregulare, staminibus unilateralibus arcuatis. Omnia bulbosa, filamentis liberis.

Subtribus 1. Homoglossa. Limbi segmenta subæqualia.

* *Styli apice bifidi, ramis divaricatis.*

53. **Anomatheca.** Inflorescentia spicata. Tubus gracilis, cylindricus. Spathæ valvæ lanceolatæ integræ acutæ. Folia aggregata. *C. B. Spei, Africa tropicalis.*

54. **Lapeyrousia.** Inflorescentia sæpisime corymbosa. Tubus gracilis cylindricus. Folia sæpissime segregata. *C. B. Spei, Africa tropicalis.*

55. **Watsonia.** Inflorescentia spicata. Tubus curvatus infundibularis medio cito ampliatus. *C. B. Spei, Madagascaria.*

** *Styli rami integri, stigmatibus parvis petaloideis.*

56. **Acidanthera.** Tubus elongatus cylindricus subrectus. Spathæ valvæ magnæ integræ virides lanceolatæ. Folia plana glabra segregata. *C. B. Spei, Africa tropicalis.*

57. **Homoglossum.** Tubus curvatus infundibularis medio cito ampliatus. Spathæ valvæ lanceolatæ integræ. Folia angustissima glabra segregata. *C. B. Spei.*

58. **Tritonia.** Tubus brevis late infundibularis. Spathæ valvæ breves brunneæ apice dentatæ. Folia plana glabra aggregata. *C. B. Spei.*

60. **Babiana** et **Acaste.** Tubus brevis late infundibularis. Spathæ valvæ lanceolatæ pilosæ. Folia aggregata pilosa plicata oblique petiolata. *C. B. Spei.*

Subtribus 2. Heteroglossa. Limbi segmenta valde inæqualia.

* *Styli rami bifidi, ramulis divaricatis.*

59. **Freesia.** Spathæ valvæ parvæ apice dentatæ. Folia glabra graminoidea. *C. B. Spei.*

** *Styli rami integri.*

a. Humiles, seminibus turgidis.

60. **Babiana** et **Eubabiana.** Tubus productus apice infundibularis. Spathæ valvæ lanceolatæ subcoriaceæ pilosæ. Folia pilosa plicata oblique petiolata. *C. B. Spei.*

61. **Melasphærula.** Tubus brevissimus. Limbi segmenta cuspidata. Spathæ valvæ parvæ integræ glabræ. Folia glabra plana membranacea. *C. B. Spei.*

62. **Montbretia.** Tubus productus apice infundibularis. Spathæ valvæ sæpissime breves apice sphacelatæ dentatæ. Folia plana glabra. *C. B. Spei.*

63. **Synnottia.** Tubus productus infundibularis. Spathæ valvæ breves membranaceæ brunneo punctatæ apice laceratæ. Folia plana glabra. *C. B. Spei.*

b. Elatæ, seminibus sæpissime discoideis alatis.

64. **Gladiolus.** Tubus curvatus infundibularis sensim ampliatus. Segmenta tubo æquilonga vel longiora. *C. B. Spei, Africa trop., Mauritania, Oriens, Europa cent. et austr.*

65. **Antholyza.** Tubus curvatus, medio cito ampliatus. Segmenta tubo breviora. *C. B. Spei, Africa trop.*

1. CROCUS, *Tournef.*

Tournef. Instit. 350, t. 183–184; *Linn. Gen.* No. 55; *Ker, Gen. Irid.* 72; *Herbert in Journ. Roy. Hort. Soc.* ii. 249; *Klatt in Linnæa*, xxiv. 675; *Baker in Gard. Chron.* anno 1873.—Crociris, *Schur, Sert.* 1853, 73.

Perianthium regulare infundibulare erectum, tubo supra ovarium longe producto cylindrico recto, segmentis oblongo-spathulatis conformibus diu erectis imbricatis. Stamina 3, ad faucem tubi æquilateraliter inserta, segmentis breviora, filamentis liberis applanatis, antheris erectis linearibus sagittatis. Ovarium triloculare, ovulis in loculo plurimis horizontalibus; stylus filiformis, longissimus, ex tubo perianthii exsertus, ramis stigmatosis tribus subintegris, apice fimbriatis vel multifidis ramis capillaribus patulis. Capsula chartacea, oblongo-trigona, ab apice loculicide trivalvis, seminibus multis globosis, testa membranacea brunnea, albumine corneo, embryone minuto recto axili. *Herbæ acaules, cormo annuo prolifero tunicis membranaceis fibrosis vel reticulatis, foliis anguste linearibus, siccis persistentibus, synanthiis vel hysteranthiis sæpe albo vittatis, spatha basali membranacea vel nulla, tubo spatha propria elongata membranacea 1–2-valvi bracteato, floribus magnis speciosis vernalibus vel autumnalibus albis lilacinis vel luteis sæpe vittatis.*

Sect. 1. HOLOSTIGMA. *Stigmata tria subintegra, vix fimbriata.*

* *Vernales.*

1. C. CHRYSANTHUS, *Herb. in Journ. Hort. Soc.* ii. 285, *non Bot. Reg.*—C. annulatus, var. chrysanthus, *Herb. in Bot. Mag.* sub t. 3861.—C. croceus, *K. Koch in Linnæa*, xix. 7.—C. sulphureus, *Griseb. Fl. Rumel.* ii. 373, non *Ker*. *Asia Minor, Roumelia.*

Var. FUSCO-TINCTUS, *Baker*. *Asia Minor.*

Var. FUSCO-LINEATUS, *Baker*. *Asia Minor.*

2. C. MÆSIACUS, *Ker in Bot. Mag.* sub t. 652.—C. luteus, *Lam. Encyc.* vi. 385; *Red. Lil.* t. 196; *Reich. Ic. Crit.* tab. 926. fig. 1247.—C. vernus, *Curt. Bot. Mag.* t. 45, non *All.*—C. floribundus, *Haworth in Trans. Hort. Soc.* i. 133.—C. lagenæflorus, var. luteus, *Herb. in Journ. Hort. Soc.* ii. 282. *Asia Minor, Græcia.*

Var. C. AUREUS, *Sibth. & Sm., Flor. Græc.* t. 35; *Bot. Mag.* t. 2986; *Eng. Bot. Suppl.* t. 2646; *Reich. Ic. Crit.* tab. 925, fig. 1246; *Reich. Ic. Germ.* fig. 792.—C. lagenæflorus, var. 3, *Salisb. Parad. Lond.* t. 106.—C. lagenæflorus, *Sabine in Trans. Hort. Soc.* vii. 444, t. 11. fig. 2. *Asia Minor, Græcia, Banatus.*

Var. C. STELLARIS, *Haworth in Trans. Hort. Soc.* i. 136, cum icone. Hybrida hortensis inter *mæsiacum* et *susianum*?

Var. C. SULPHUREUS, *Ker, Bot. Mag.* t. 938 & 1384; *Sabine in Trans. Hort. Soc.* vii. t. 11. fig. 1; *Reich. Ic. Crit.* t. 927. fig. 1248.—C flavus, *Haworth in Trans. Hort. Soc.* i. 135. *Græcia.*

Var. C. LACTEUS, *Sabine in Trans. Hort. Soc.* vii. 447, tab. 11. fig. 3. Forma hortensis.

3. C. GARGARICUS, *Herb. in Journ. Hort. Soc.* ii. 281; *Bot. Reg.* 1847, tab. 116. fig. 1.—C. Thirkeanus, *K. Koch in Linnæa*, xxi. 633. *Asia Minor.*

4. C. SUSIANUS, *Ker in Bot. Mag.* t. 652; *Red. Lil.* t. 293; *Hayne, Arzneik. G.* vi. t. 28; *Reich. Ic. Crit.* t. 928. fig. 1249; *Reich. Ic. Germ.* t. 358. fig. 794.—C. revolutus, *Haworth in Hort. Trans.* i. 136.—C. reticulatus, *M. B. Plant. Ross.* t. 1, *ex parte.*—C. Roegnerianus, *K. Koch in Linnæa*, xxi. 634. *Caucasus, Crimea, Podolia.*

Var. IMMACULATUS, *Herb. in Journ. Hort. Soc.* ii. 279. *Constantinople.*

Var. ANCYRENSIS, *Herb. loc. cit.* *Asia minor.*

5. C. CREWEI, *Hook. fil. in Bot. Mag.* t. 6168. *Insula Syra.*

6. C. BIFLORUS, *Miller, Gard. Dict.* edit. 7, No. 4; *Bot. Mag.* t. 845; *Andr. Bot. Rep.* t. 362; *Red. Lil.* t. 294; *Reich. Ic. Exot.* t. 34; *Reich. Ic. Crit.* t. 935–936. fig. 1256–59; *Ic. Germ.* t. 386. fig. 788–89.—C. circumscissus, *Haworth in Trans. Hort. Soc.* i. 137.—C. annulatus, *Herb. in Journ. Hort. Soc.* ii. 285. *Italia.*

Var. C. ARGENTEUS, *Sabine in Trans. Hort. Soc.* vii. t. 11. fig. 5.—C. minimus, *Bot. Mag.* t. 2991, non *DC.*—C. præcox, *Haw. E. B. S.* t. 2645.—C. lineatus, *Jan, Elench.* 1; *Reich. Ic. Crit.* fig. 1259; *Reich. Ic. Germ.* fig. 788–9. *Italia.*

Var. C. PUSILLUS, *Tenore, Mem.* 8, t. 2; *Sweet, Brit. Flow. Gard.* t. 106; *Ten. Fl. Nap.* t. 206; *Lodd. Bot. Cab.* t. 1454; *Bot. Reg.* t. 1987. *Italia.*

Var. C. WELDENI, *Hoppe in Bot. Zeit.* 1840, 208; *Bot. Mag.* t. 6211. *Dalmatia.*

Var. C. ADAMI, *Gay in Bull. Féruss.* xv. 219.—C. biflorus, *M. B. Flor. Taur. Cauc., Suppl.* 37.—C. annulatus, var. adamicus, *Herb. in Journ. Hort. Soc.* ii. 285; *Bot. Mag.* t. 3868. *Crimea & Caucasus.*

Var. C. NUBIGENUS, *Herb. Bot. Reg.* 1843, *Misc.* 81. *Asia Minor.*

7. C. VERSICOLOR, *Ker, Bot. Mag.* t. 1110.—C. fragrans, *Haw. in Trans. Hort. Soc.* i. 136.—C. Reinwardtii, *Reich. Ic. Crit.* tab. 938. fig. 1261. *Gallia orientalis meridionalis.*

Var. C. CRESTENSIS, *Eugene in Bull. Bot. Soc. France,* xv. 190.

8. C. SUAVEOLENS, *Bertol. Fl. Ital.* i. 208; *Bot. Mag.* t. 3864; *Sweet, Brit. Flow. Gard.* ser. ii. t. 252. *Italia.*

9. C. MINIMUS, *DC. Fl. France,* iii. 243; *Red. Lil.* t. 81; *Reich. Ic. Crit.* t. 491. fig. 1267; *Ic. Germ.* tab. 359. fig. 795.—C. insularis, *Gay in Bull. Féruss.* xv. 221; *Bot. Reg.* 1843, t. 21.—C. corsicus, *Vanucci.*—C. nanus, *DC. Syn. Gall.* 168. *Sardinia, Corsica.*

10. C. BANATICUS, *Heuffel in Flora,* 1835, 255; *Reich. Germ.* t. 361, fig. 800–1, *non Gay.*—C. Heuffellii, *Kornicke in Flora,* 1856, 476.—C. Heuffellianus, *Herbert in Journ. Hort. Soc.* ii. 273. *Hungaria, Transylvania, Croatia.*

11. C. VERNUS, *All. Ped.* i. 84; *Eng. Bot.* t. 344; edit. 3, t. 1499; *Jacq. Austr.* v. t. 36; *Red. Lil.* t. 266; *Reich. Exot.* t. 22; *Reich. Ic. Crit.* t. 929–934; *Ic. Germ.* t. 355; *Fl. Dan.* t. 2042.—C. officinalis sylvestris, *Huds. Angl.* i. 13. *Europa centralis et meridionalis,*

Var. C. ALBIFLORUS, *Kit. in Schult. Œster. Fl.* i. 101; *Reich. Ic. Crit.* fig. 1255; *Ic. Germ.* tab. 355. fig. 787.—C. montanus, *Hoppe.*—C. siculus, *Tineo in Guss. Prodr. Fl. Sic. Suppl.* 7.

Var. C. OBOVATUS, *Haworth in Trans. Hort. Soc.* i. 133.—C. vernus, var. neapolitanus, *Ker in Bot. Mag.* t. 860, 2240.

Var. C. NIVIGENUS, *Herb. in Bot. Reg.* 1843, *Misc.* 82. *Odessa.*

Var. C. TOMMASINIANUS, *Herb. in Journ. Hort. Soc.* ii. 273. *Dalmatia.*

? Var. C. NERVIFOLIUS, *Reich. Ic. Crit.* t. 942–3. fig. 1268–9.

12. C. SIEBERI, *Gay in Bull. Férus.* 1831, 220; *Bot. Mag.* t. 6036.—C. nivalis, *Bory & Chaub. Exp. Morée,* 21, t. 2. fig. 1; *Bot. Reg.* xxxiii. t. 4. fig. 2.—C. Sieberianus, *Herb. in Bot. Mag.* sub t. 3866.—C. sublimis, *Herb. in Bot. Reg.* 1845, *Misc.* 8.—C. Sibthorpianus, *Herb. in Bot. Reg.* 1845, *Misc.* 28. *Græcia, Crete, Asia Minor.*

Var. C. ATTICUS, *Orphanides, MS.* *Græcia.*

Var. C. VELUCHENSIS, *Herb. in Bot. Reg.* 1847, tab. 4. fig. 3; *Bot. Mag.* t. 6197.—C. uniflorus, *Schur in Verh. Sieb. Ver.* 1852, 90.—C. balcanensis, *Janka, Pl. Nov. Turc. Brev.* 8.—C. thessalus, *Boiss. & Sprun. Diag.* xiv. 17. *Græcia, Transylvania.*

Var. C. EXIGUUS, *Schur, Fl. Transyl.* 652. *Transylvania.*

13. C. PARVIFLORUS, *Baker in Trimen's Journ.* 1876, 266. *Taurus Ciliciæ.*

14. C. ALATAVICUS, *Regel et Semenow, Enum. Pl. Semenow,* 111. *Alatau cisiliensis.*

15. C. CARPETANUS, *Boiss. & Reut. Diag.* 24; *Graells Ramill.* fasc. 1, 10, t. 4. *Hispania.*

16. C. RETICULATUS, *M. B. Flor. Taur. Cauc.* i. 28, *et Cent. Pl. Ross.* t. 1, *ex parte*; *Reich. Ic. Crit.* t. 939–940; *Ic. Germ.* t. 356.—C. variegatus, *Hoppe & Hornsch. Tagebuch,* t. 1; *Sturm, Deutsch. Flora,* xiii. t. 54.—C. micranthus, *Boiss. Diag.* ser. 2, iv. 95. *Caucasus, Asia Minor, Austria.*

Var. ALBICANS, *Herb. Bot. Reg.* xxxiii. t. 16. fig. 2.

Var. C. DALMATICUS, *Visiani, Fl. Dalm. Suppl.* t. 2. *Dalmatia.*

17. C. ETRUSCUS, *Parlat. Fl. Ital.* iii. 228. *Italia.*

** *Autumnales.*

18. C. SATIVUS, *Linn. Sp. Plant.* 50; *Lam. Ency.* t. 30; *Red. Lil.* t. 173; *Reich. Ic. Germ.* t. 360; *Eng. Bot.* t. 343; *Royle, Him. Ill.* t. 91. fig. 1.—C. Orsinii, *Parl. Fl. Ital.* iii. 238.—C. Haussknechtii, *Boiss. in Haussk. Exsic.*—? C. intromissus, *Herb. in Journ. Hort. Soc.* ii. 268. *Patria incerta.*

19. C. CARTWRIGHTIANUS, *Herb. in Bot. Reg.* xxx. t. 3. fig. 6, xxxi. t. 37. fig. 6, 7; *Moore in Floral Mag.* 1850, ii. 273, *cum icone.*—C. græcus, *Chapellier in Bull. Soc. Bot. France,* xx. 192. *Græcia.*

20. C. PALLASII, *M. Bieb. Fl. Taur. Cauc.* iii. 35.—C. autumnalis, *M. Bieb. Flor. Taur. Cauc.* i. 27.—C. Pallasianus, *Herb. in Bot. Reg.* xxx. t. 3. fig. 2. *Crimea.*

21. C. THOMASII, *Tenore, Mem. Croc.* 12, t. 4; *Ten. Fl. Nap.* t. 204, 205; *Reich. Ic. Crit.* t. 951.—C. Thomasianus, *Herb. in Bot. Reg.* xxx. t. 3. fig. 6. *Italia meridionalis.*

22. C. VISIANICUS, *Herb. in Bot. Reg.* 1845, *Misc.* 8.—C. Pallasii, *Vis. Fl. Dalm.* 120; *Reich. Ic. Germ.* t. 796, 797, *non M. B.*—C. versicolor, var. dalmaticus, *Herb. in Bot. Mag.* sub t. 3871.—? C. hybernus, *Friv. in Griseb. Fl. Rumel.* ii. 374. *Dalmatia.*

23. C. HADRIATICUS, *Herb. in Bot. Reg.* 1843, *Misc.* 77; *Bot. Reg.* 1847, t. 16. fig. 7–9. *Albania, Insulæ Ionicæ.*

24. C. CAMBESSEDESII, *Gay in Bull. Féruss.* vv. 220.—C. Cambessedesianus, *Herb. in Bot. Reg.* xxxi. t. 37. fig. 4. *Majorca.*

25. C. LAZICUS, *Boiss. in Balan. Pl. Orient.* 1866, *Exsic.* No. 1533. *Lazistan.*

26. C. PELOPONNESIACUS, *Orphan. in Boiss. Diag.* ser. 2, iv. 94. *Græcia.*

27. C. KOTSCHYANUS, *K. Koch, Ind. Sem. Hort. Berol.* 1853. C. zonatus, *Gay in Balansa, Pl. Orient. Exsic.* 1855, No. 823.—? C. karduchorum, *Kotschy, Pl. Cilic. Exsic.* 1859, no. 469. *Asia Minor.*

28. C. SCHAROJANI, *Ruprecht in Regelii Gartenflora*, xvii. 134, t. 578. fig. 2. *Caucasus occidentalis.*

Sect. II. ODONTOSTIGMA. *Stigmata tria distincte breviter fimbriata.*

* *Vernales.*

29. C. OLIVIERI, *Gay in Bull. Féruss.* 1831, 219; *Bot. Mag.* t. 6031. —C. lagenæflorus, var. Olivierianus, *Herb. in Journ. Hort. Soc.* ii. 282.—C. Aucheri, *Boiss. Diag.* xiii. 16. *Græcia, Asia Minor.*

30. C. SUTERIANUS, *Herb. in Bot. Reg.* 1845, *Misc.* 5.—C. chrysanthus, *Herb. in Bot. Reg.* 1847, t. 7. fig. 1. *Asia Minor.*

31. C. ALEPPICUS, *Baker in Gard. Chron.* 1873, 609. *Asia Minor.*

32. C. AERIUS, *Herb. in Journ. Hort. Soc.* ii. 288.—C. Sibthorpianus, var. stauricus, *Herb. in Bot. Reg.* 1845, *Misc.* 5. *Armenia.*
Var. ? C. PULCHRICOLOR, *Herb. loc. cit.*—? C. Pestallozzæ, *Boiss. Diag.* xiii. 17. *Bithynia.*
Var. ? C. CYPRIUS, *Boiss. & Kotschy in Unger & Kots. Cyprus*, 203. *Cyprus.*

33. C. IMPERATI, *Ten. Fl. Neap.* iii. 411; *Mem.* t. 3; *Reich. Ic. Crit.* fig. 1260; *Bot. Reg.* t. 1993.—C. Imperatonius, *Herb. in Journ. Hort. Soc.* ii. 260. *Calabria.*

** *Autumnales.*

34. C. LONGIFLORUS, *Rafin. Caratt.* 84, t. 19. fig. 2; *Bot. Reg.* xxx. t. 3. fig. 4; *Reich Ic. Crit.* fig. 1272–3.—C. odorus, *Biv. Stirp. Sic.* iii. 8, t. 2. *Calabria, Sicilia.*
Var. MELITENSIS, *Herb. in Bot. Reg.* 1844, t. 3. fig. 5. *Melita.*

35. C. SEROTINUS, *Salisb. Parad. Lond.* t. 30; *Bot. Mag.* t. 1267; *Reich. Ic. Crit.* fig. 1271. *Patria incerta.*

Var. C. SALZMANNI, *Gay in Bull. Féruss.* xv. 220; *Hook. fil. Bot. Mag.* t. 6000.—C. Salzmannianus, *Herb. in Bot. Reg.* 1847, t. 4. fig 4.—C. tingitanus, *Herb. in Bot. Mag.* sub t. 3868. *Marocco.*

36. C. CASPIUS, *Fisch. & Mey. in Hohen. Enum. Talusch.* 22. *Caucasus.*

37. C. OCHROLEUCUS, *Boiss. & Gaill. in Boiss. Diag.* ser. 2, iv. 93. *Hook. fil. Bot. Mag.* t. 5297. *Syria, Palæstina.*

38. C. VALLICOLA, *Herb. in Bot. Reg.* xxxiii. t. 16. fig. 3.—C. Suwarrowianus, *K. Koch in Linnæa*, xxi. 633. *Armenia.*

39. C. DAMASCENUS, *Herb. in Bot. Reg.* 1845, t. 37. fig. 1.—C. edulis, *Boiss. & Blanche, Exsic.* *Syria.*

Sect. III. SCHIZOSTIGMA. *Stigmata tria multifida, ramis capillaribus patulis.*

* *Vernales.*

40. C. VITELLINUS, *Wahl. in Isis*, xvi. 106.—C. syriacus, *Boiss. & Gaill. in Bois. Diag.* ser. 2, iv. 94. *Syria.*

41. C. SYRIACUS, *Herb. in Journ. Hort. Soc.* ii. 282. *Asia Minor.*

42. C. FLEISCHERI, *Gay in Bull. Féruss.* 1831, 219.—C. Fleischerianus, *Herb. in Journ. Hort. Soc.* ii. 278.—C. smyrnensis, *Poech, Enum. Pl. Ins. Cyp.* 11.—C. candidus, "*Clarke,*" *Travels*, iii. 185; *Boiss. Diag.* xiii. 16.—C. minimus, var. major, *Presl, Bemerk.* 116. *Asia Minor.*

43. C. HYEMALIS, *Boiss. & Blanche. Diag.* 2, iv. 93. *Syria.*
Var. GAILLARDOTII, *Boiss. & Blanche in Rel. Mail.* No. 1718. *Syria.*

** *Autumnales.*

44. C. CLUSII, *Gay in Bull. Féruss.* xv. 220.—C. clusianus, *Herb. in Journ. Hort. Soc.* ii. 269.—C. autumnalis, *Brotero, Fl. Lusit.* i. 49. *Lusitania.*

45. C. BORYI, *Gay in Bull. Féruss.* xv. 220.—C. Boryanus, *Herb. in Bot. Reg.* 1847, t. 16. fig. 10.—C. ionicus, *Herb. in Bot. Reg.* 1845, *Misc.* 3.—C. marathonisius, *Held, Exsic.* No. 2806.—C. Veneris, *Tapp. in Poech, Pl. Cyp.* 10. *Græcia, Cyprus, Insulæ Ionicæ.*
Var. C. ORPHANIDIS, *Hook. fil. Bot. Mag.* t. 5776. *Græcia.*
Var. C. CRETENSIS, *Kornicke in Flora*, 1856, 409. *Creta.*

46. C. SCHIMPERI, *Gay in Schimp. Pl. Cephal. Exsic.*—C. nudiflorus, *Sibth. & Sm. Prod. Græc.* 23, excl. syn.—C. cancellatus, *Herb. in Bot. Mag.* sub t. 3864.—C. Spruneri, *Boiss. & Held, Diag.* vii. 103.—C. mazziaricus, *Herb. in Bot. Reg.* 1845, *Misc.* 3, 1847, tab. 16. fig. 5, 6.—C. dianthus, *K. Koch in Linnæa*, xxi. 634.—C. pylarum, *Gay in Balansa, Pl. Orient. Exsic.* no. 316.—C. cilicius, *Kotschy, Pl. Cilic. Exsic.* no. 316. *Græcia, Asia Minor.*

47. C. MEDIUS, *Balbis, Add. Pedem.* 83; *Bot. Reg.* xxi. t. 37. fig. 5; *Mogg. Cont. Ment.* t. 20. *Gallia meridionalis, Italia.*

48. C. NUDIFLORUS, *Smith in Eng. Bot.* t. 491; edit. 3, t. 1500; *Baxter, Brit. Bot.* t. 137.—C. multifidus, *Ramond in Bull. Soc. Phil.* ii. 129. t. 8.—C. speciosus, *Wils. in Eng. Bot. Suppl.* t. 2752, *non M. B.*—C. pyrenæus (*Parkins.*), *Herb. in Journ. Hort. Soc.* ii. 255. *Gallia, Hispania.*

Var. C. ASTURICUS, *Herb. in Bot. Mag.* t. 3998. fig. 2. *Asturia.*

49. C. SPECIOSUS, *M. B. Flor. Taur. Cauc.* i. 27; *Cent. Ross.* t. 71; *Bot. Mag.* t. 3861; *Bot. Reg.* xxv. t. 40.—C. multifidus, *Reich. Ic. Crit.* fig. 1275, *non Ramond. Austria, Crimea, Caucasus, Persia borealis.*

50. C. PULCHELLUS, *Herb. in Bot. Reg.* 1843, *Misc.* 28; *Bot. Reg.* xxx. t. 3; *Moore, Floral Mag.* 1850, *cum icone. Turcia, Græcia, Asia Minor.*

51. C. BYZANTINUS (*Parkins.*), *Ker in Bot. Mag.* t. 1111; *Herb. in Bot. Reg.* 1847, t. 4. fig. 5; *Bot. Mag.* t. 6141.—C. banaticus, *Gay in Bull. Féruss.* xv. 220, *non Heuffel.*—C. speciosus, *Reich. Pl. Crit.* figs. 1267–8, *non M. B.*—C. iridiflorus, *Heuff. in Œster. Bot. Wochen.* 1857, 222; *Reich. Ic. Germ.* fig. 802–3.—C. Herbertianus, *Kornicke in Walp. Ann.* vi. 51.—Crociris iridiflora, *Schur, Sert.* 1853, 73. *Austria.*

2. SYRINGODEA, *Hook. fil.*

Hook. fil. in Bot. Mag. t. 6072; *Baker in Trimen's Journ.* 1876, 66.

Perianthium hypocrateriforme vel infundibulare, tubo cylindrico elongato sursum vix ampliato, segmentis 6 conformibus obovatis integris vel emarginatis. *Stamina* 3, ad faucem tubi inserta, segmentis breviora, filamentis brevibus liberis filiformibus, antheris basifixis lineari-sagittatis. *Ovarium* triloculare, ovulis in loculo pluribus horizontalibus; *stylus* ex tubo breviter exsertus, *stigmatibus* tribus parvis patulis cuneatis. *Capsula* oblonga membranacea, loculicide trivalvis, seminibus minutis turgidis, testa brunnea. *Herbæ acaules habitu* Croci, *bulbi tunicis membranaceis brunneis secus collum productis, spathis membranaceis unifloris, valvis 2 linearibus tubo brevioribus, floribus erectis lilacinis fauce luteis magnitudine mediocribus.*

* *Segmenta patula emarginata.*

1. S. PULCHELLA, *Hook. fil. in Bot. Mag.* t. 6072. *Cape.*

** *Segmenta ascendentia integra.*

2. S. BICOLOR, *Baker in Trimen, Journ.* 1876, 67.—Trichonema longitubum, *Klatt in Linnæa,* xxxiv. 665. *Cape.*

3. S. FILIFOLIA, *Baker,* loc. cit. *Cape.*

3. ROMULEA, *Maratti.*

Maratti Diss. 13 (anno 1772); *Tenore in Mem. Accad. Neap.* iii. 117, t. 7.—Trichonema, *Ker in Bot. Mag.* sub t. 575 (anno 1801); *Gen. Irid.* 79.—Bulbocodium, *Tournef.* ; *Mill. Ic.* t. 240.—Ixiæ sp., *Linn. Sp. Plant.* edit. 2.—Croci sp., *Linn. Sp. Plant.* edit. 1.

Perianthium regulare erectum, tubo brevi infundibulari, segmentis oblongis subconformibus diu erectis imbricatis. Stamina 3, in tubo æquilateraliter inserta, segmentis breviora, filamentis liberis subulatis, antheris erectis linearibus sagittatis. *Ovarium* triloculare, ovulis in loculo plurimis horizontalibus; *stylus* filiformis ex tubo longe exsertus, ramis stigmatosis tribus falcatis brevibus emarginatis. *Capsula* oblonga chartacea loculicide trivalvis, seminibus globosis, testa membranacea nigro-castanea, albumine corneo, embryone recto axili. *Herbæ humiles bulbosæ, tunicis radicalibus crustaceis brunneis, foliis paucis teretibus persistentibus, pedunculis simplicibus vel parce corymbosis, spathæ unifloræ valvis duabus lanceolatis integris flore brevioribus, exteriore duro viridulo, interiore minore membranacea, floribus solitariis vel paucis magnitudine mediocribus lilacinis, luteis vel albidis segmentis dorso purpureo-brunneo striatis.*

I. Species mediterraneæ et montium Africæ tropicalis.

* *Grandifloræ.*

1. R. BULBOCODIUM, *Seb. & Maur. Fl. Rom.* 17; *Reich. Ic. Fl. Germ.* tab. 356. fig. 782–3; *Mogg. Cont. Ment.* t. 93 A.—Ixia Bulbocodium, *Linn. Sp. Plant.* 51, ex parte majore; *Jacq. Ic.* t. 271; *Bot. Mag.* t. 265.—Trichonema Bulbocodium, *Ker in König & Sims, Ann.* i. 223.—T. collinum, *Salisb. in Trans. Hort. Soc.* i. 317.—Romulea uliginosa, *Kunzem. Flora,* 1846, 690. *Regio mediterranea.*

Var. R. PULCHELLA, *Jord. & Four. Brev.* ii. 106; *Ic.* tab. 107. fig. 163. *Italia.*

Var. R. SYRTICA, *Jord. & Four. Brev.* i. 48; *Ic.* tab. 108. fig. 165. *Gallia meridionalis.*

Var. R. GRANDIFLORA, *Todaro*; *Jord. & Four. Brev.* i. 49; *Ic.* tab. 108. fig. 164. *Sicilia.*

Var. R. FLAVEOLA, *Jord. & Four. Brev.* ii. 106.—*Gallia australis.*

Var. SUBPALUSTRE.—Trichonema subpalustre, *Herb. in Bot. Reg.* xxx. t. 40. fig. 1. *Turcia et insulæ Ionicæ.*

Var. PYLIUM.—Trichonema pylium, *Herb. in Bot. Reg.* xxx. t. 40. fig. 2. *Græcia.*

Var. UMBELLATUM,—Trichonema umbellatum, *Klatt in Linnæa,* xxxiv. 670. *Marocco.*

Var. R. CROCEA, *Bois. & Held, Diagn.* xiii. 18. *Syria.*

Var. NIVALE.—Trichonema nivale, *Boiss. & Kotschy, Diagn.* ser. ii. 492. —T. croceum, *Klatt in Linnæa,* xxxiv. 669. *Syria.*

2. R. CLUSIANA, *Baker.*—Trichonema Clusianum, *Lange, Pugill.* 75; *Ic. Plant. Nov. Hisp.* t. 34. *Hispania australis.*

3. R. CROCIFOLIA, *Visiani, Fl. Dalm. Suppl.* 30, t. 2. *Dalmatia.*

4. R. ELONGATA, *Baker.*—Ixia elongata, *Vahl, Enum.* ii. 51.—Trichonema elongatum, *Ker in Bot. Mag.* sub t. 1225. *Sardinia.*

5. R. GRANDISCAPA, *J. Gay in Bourg. Pl. Canar. Exsic.* 1855, No. 1473.—Trichonema grandiscapa, *Webb, Phyt. Can.* iii. 312, t. 222.—? R. Hartungii. *Parl. in Walp. Ann.* vi. 49. *Insulæ Canarienses, Madeira.*

** *Purpurascentes.*

6. R. LIGUSTICA, *Parl. Fl. Ital.* iii. 249; *Mogg. Cont. Mentone,* t. 93, B, C. *Liguria.*

7. R. ROLLII, *Parl. Fl. Ital.* iii. 251. *Roma.*

8. R. RAMIFLORA, *Ten. Mem.* 113; *Mogg. Cont. Ment.* t. 92.—Ixia ramiflora, *Ten. Syll.* 25; *Fl. Neap.* tab. 203. fig. 3.—Trichonema ramiflora, *Sweet, Brit. Flow. Gard.* 596. *Regio mediterranea.*

9. R. CORSICA, *Jord. et Four. Brev.* ii. 107. *Corsica.*

10. R. NEGLECTA, *Jord, & Four. Brev.* ii. 107. *Sicilia?*

11. R. PURPURASCENS, *Tenore, Mem.* 117; *Jord. & Four. Ic.* tab. 106. fig. 161.—Ixia purpurascens, *Ten. Fl. Neap.* i. 13. t. 3.—Trichonema purpurascens, *Sweet, Hort. Brit.* 503. *Regio mediterranea.*

Var. ? EDULIS.—Trichonema edule, *Herb. in herb. Kew. Socotra et ad ripas Maris Rubri.*

12. R. NUMIDICA, *Jord. et Four. Brev.* i. 49. *Algeria.*

13. R. LINARESII, *Parl. Fl. Panorm.* i. 38; *Jord. & Four. Ic.* t. 107. fig. 162.—Ixia Bulbocodium, *Sibth. & Sm. Fl. Græc.* i. 26, t. 36.—T. maritima, *Sibth. in herb. Banks.*—Trichonema Linaresii, *Klatt in Linn.* xxxiv. 660. *Italia, Græcia, Asia Minor, Abyssinia?*

14. R. **Requienii**, *Parl. Fl. Ital.* iii. 248; *Jord. & Four. Ic.* t. 109. fig. 166.—Trichonema Linaresii, *Gren. & Godr. Fl. France,* iii. 238, excl. syn. *Corsica.*

*** *Parvifloræ.*

15. R. **Columnæ**, *Seb. & Maur. Fl. Rom.* 18; *Reich. Ic. Germ.* tab. 356. fig. 784-5; *Mogg. Cont. Ment.* t. 91.—Trichonema Columnæ, *Reich. Fl. Excurs.* i. 83; *Eng. Bot.* edit. iii. t. 1492.—Ixia parviflora, *Salisb. Prod.* 14.—T. minima, *Ten. Syll.* 24.—T. Bulbocodium, *Smith, Eng. Bot.* t. 2549.—T. Bulbocodium, var. parviflora, *Vahl, Enum.* ii. 50.—T. Bulbocodium, var. minima, *Ten. Fl. Nap. Prodr.* 7. *Regio mediterranea, Anglia, Gallia, Insulæ Azoricæ.*

Var. R. **modesta**, *Jord. & Four. Ic.* t. 110. fig. 168. *Corsica.*

Var. R. **subalbida**, *Jord. & Four. Ic.* t. 110. fig. 169. *Corsica.*

16. R. **Revelieri**, *Jord. & Four. Ic.* t. 109. fig. 167. *Corsica.*

17. R. **camerooniana**, *Baker in Trimen's Journ.* 1876, 236. *Montes Cameroon.*

II. Species capenses.

* *Luteæ.*

18. R. **bulbocodioides**, *Eckl. Verz. Top.* 19.—Ixia bulbocodioides, *Delaroche, Diss.* 19.—I. recurva, *Red. Lil.* t. 251. fig. 1.—Trichonema recurvum, *Spreng. Syst. Veg.* i. 149.—T. recurvifolium, *Poiret, Ency. Suppl.* iii. 201.—Romulea recurva, *Eckl. Verz. Top.* 20.—R. chloroleuca, *Eckl. Verz. Top.* 20, excl. syn.—Trichonema caulescens, *Ker in Bot. Mag.* t. 1392.—T. hypoxidiflorum, *Salisb. in Trans. Hort. Soc.* i. 316.—Ixia flava, *Lam. Ill.* i. 109.—I. crocea et reflexa, *Thunb. Fl. Cap.* edit. 2, 55. *C. B. Spei.*

19. R. **sublutea**, *Baker.*—Ixia sublutea, *Lam. Encyc.* iv. 335.—Geissorhiza sublutea, *Ker in K. & S. Ann.* i. 223.—Ixia filifolia, *Red. Lil.* t. 251. fig. 2.—Trichonema filifolia, *Poir. Ency. Suppl.* iii. 201. *C. B. Spei.*

20. R. **filifolia**, *Eckl. Verz. Top.* 20, excl. syn. *Red.*—Trichonema filifolium, *Klatt in Linn.* xxxiv. 671. *C. B. Spei.*

21. R. **Macowani**, *Baker in Trimen, Journ.* 1876, 236. *C. B. Spei.*

22. R. **tortuosa**, *Baker.*—Trichonema tortuosa, *Lichten. Reise,* iv 51.—Ixia tortuosa, *Licht. in Roem. & Schult. Syst.* i. 375. *C. B. Spei.*

** *Rubro-violaceæ.*

23. R. **rosea**, *Eckl. Verz. Top.* 19.—Ixia rosea, *Murr. Syst. Veg.* xii

75.—Trichonema roseum, *Ker in Bot. Mag.* sub t. 575; *Bot. Mag.* t. 1225.—Crocus capensis, *Burm. Prodr.* 2, ex parte.—R. vulgaris, *Eckl. Verz. Top.* 18.—Ixia radians, *Thunb. Fl. Cap.* edit. 2, 54, ex parte.—I. fugax, *Horn. Hort. Hafn.* i. 50; *Mill. Ic.* 160, tab. 140. *C. B. Spei.*

Var. CELSII, *Planch. in Flore des Serres,* t. 799. *C. B. Spei.*

24. R. LONGIFOLIA, *Baker.*—Trichonema longifolium, *Salisb. in Trans. Hort. Soc.* i. 316.—T. cruciatum, *Ker in B. M.* t. 575, excl. syn. *Jacq. C. B. Spei.*

25. R. CRUCIATA, *Baker.*—Ixia cruciata, *Jacq. Ic.* t. 290.—Trichonema cruciatum, *Ker in B. M.* t. 575, ex parte. *C. B. Spei.*

26. R. PUDICA, *Baker.*—Ixia pudica, *Soland. in hb. Banks.*; *Roem. & Schultes, Syst.* i. 377.—Trichonema pudica, *Ker in Bot. Mag.* sub t. 575. *C. B. Spei.*

27. R. CUPREA, *Baker in Trimen, Journ.* 1876, 236.—Trichonema cupreum, *Herb. Icon. inedit. C. B. Spei.*

28. R. SPECIOSA, *Baker.*—Ixia Bulbocodium, var. speciosa, *Andr. Bot. Rep.* t. 170.—Trichonema speciosum, *Ker in Kon. & Sims, Ann.* i. 223; *Bot. Mag.* t. 1476.—R. tabularis, *Echl. Verz. Top.* 19, teste *Klatt.*—Ixia neglecta, *Roem. & Schult. Syst. Veg.* i. *Suppl.* 279. *C. B. Spei.*

29. R. HIRSUTA, *Eckl. Verz. Top.* 19.—Trichonema hirsuta, *Klatt in Linnæa,* xxxiv. 665.—Ixia campanulata, *Lam. Ill.* i. 109, teste *Klatt. C. B. Spei.*

30. R. BARBATA, *Baker in Trimen, Journ.* 1876, 236.—Trichonema barbatum, *Herb. icon. inedit. C. B. Spei.*

31. R. ARENARIA, *Eckl. Verz. Top.* 18.—Trichonema arenarium, *Klatt in Linnæa,* xxxiv. 667.—R. ramosa, *Eckl. loc. cit., teste Klatt. C. B. Spei.*

32. R. DICHOTOMA, *Baker.*—Trichonema dichotomum, *Klatt in Linnæa,* xxxiv. 666. *C. B. Spei.*

*** *Chloroleucæ.*

33. R. CHLOROLEUCA, *Baker, non Eckl.*—Ixia chloroleuca, *Jacq. Ic.* t. 272.—I. ochroleuca, *Vahl, Enum.* ii. 50.—Trichonema ochroleucum, *Ker, Ann.* i. 223.—T. chloroleuca, *Ker, Gen. Irid.* 82. *C. B. Spei.*

34. R. SIMILIS, *Eckl. Top. Verz.* 19. *C. B. Spei.*

35. R. LATIFOLIA, *Baker in Trimen, Journ.* 1876, 237.—Trichonema latifolium, *Herb. icon. inedit. C. B. Spei.*

36. R. SPIRALIS, *Baker.*—Trichonema spirale, *Burch. Trav.* i. 260. *C. B. Spei.*

4. IXIA, *Linn.*

Linn. Gen. No. 56, ex parte; *Ker in Konig et Sims, Ann.* i. 226, excl. sp.; *Gen. Irid.* 96, excl. sp.; *Klatt in Linnæa,* xxxiv. 635, excl. sp.—Wuerthea, *Regel. Gartenfl.* ii. t. 46.

Perianthium regulare subrotatum, tubo supra ovarium cylindrico collo haud ampliato, limbo e basi late campanulato, segmentis flore expanso subpatulis oblongis obtusis imbricatis. *Stamina* 3, ad faucem tubi æquilateraliter inserta, segmentis distincte breviora, filamentis erectis filiformibus liberis vel raro coalitis, antheris ligulatis luteis basifixis. *Ovarium* oblongum triloculare, ovulis in loculo plurimis horizontalibus; *stylus* filiformis, ex tubo protrusus, stigmatibus tribus brevibus falcatis subulatis. *Capsula* parva oblonga 6-sulcata ab apice loculicide trivalvis, seminibus confertis triquetris, testa membranacea atrocastanea, albumine corneo. *Herbæ bulbosæ caulescentes capenses, bulbi tunicis subtiliter fibrosis, foliis* 3–6 *basalibus graminoideis flabellatis caule brevioribus, caulinis* 2–3 *similibus reductis, floribus copiose spicatis sæpe paniculatis speciosis albis vel versicoloribus fundo sæpe nigro suffusis, spathæ valvis duabus scariosis parvis imbricatis, exteriore oblongo tunicato apice leviter tricuspidato, interiore angustiore bidentato. Species plurimæ formis intermediis arcte connexæ.*

Subgenus I. EUIXIA. *Filamenta supra basin libera.*

* *Parvifloræ.*

1. I. POLYSTACHYA, *Linn. Sp. Plant.* 51; *Andr. Bot. Rep.* t. 155.—I. erecta, *Berg. Cap.* 5; *Bot. Mag.* t. 623.—I. serotina, *Salisb. Prodr.* 35; *Miller, Ic.* 104, tab. 155. fig. 2. *C. B. Spei.*

Var. I. FLAVESCENS, *Eckl. Verz. Top.* 26. *C. B. Spei.*

2. I. FLEXUOSA, *Linn. Sp. Plant.* 51; *Bot. Mag.* t. 624.—I. polystachya, *Red. Lil.* t. 136.—I. capitata, var. stellata, *Andr. Bot. Rep.* t. 232.—I. erecta, var. violacea, *Thunb. Diss.* No. 18.—I. thyrsiflora, *Delaroche, Diss.* 20.—I. pallide-rosea, *Eckl. Verz. Top.* 24; *Miller, Ic.* tab. 156. fig. 2. *C. B. Spei.*

3. I. HYBRIDA, *Ker in Konig & Sims, Ann.* i. 227.—I. flexuosa, *Ker in Bot. Mag.* t. 127, *non Linn.* *C. B. Spei.*

4. I. MICRANDRA, *Baker in Trimen, Journ.* 1876, 237. *C. B. Spei.*

** *Grandifloræ immaculatæ.*

5. I. ANEMONÆFLORA, *Jacq. Ic.* t. 273, *non Red. Lil.* t. 65.—Sparaxis anemonæflora, *Ker in Konig & Sims, Ann.* i. 225.—Geissorhiza anemonæflora, *Klatt in Linn.* xxxiv. 656, ex parte. *C. B. Spei.*

6. I. LEUCANTHA, *Jacq. Ic.* t. 278.—I. patens, var. leucantha, *Ker, Gen. Irid.* 98.—I. candida, *DC. in Red. Lil.* t. 426. *C. B. Spei.*

7. I. FUCATA, *Ker in Bot. Mag.* t. 1379. *C. B. Spei.*

8. I. ARISTATA, *Thunb. Diss.* No. 15; *Ker in Bot. Mag.* t. 589. *C. B. Spei.*

9. I. LUTEA, *Baker.*—I. erecta, var. lutea, *Bot. Mag.* t. 846.—I. erecta, *Jacq. Hort. Schœn.* t. 18. *C. B. Spei.*

10. I. FRAGRANS, *Jacq. Ic.* t. 274.—Sparaxis fragrans, *Ker in Konig & Sims, Ann.* i. 274. *C. B. Spei.*

11. I. CAMPANULATA, *Houtt. Handl.* xii. 42, t. 78. fig. 4. *C. B. Spei.*

12. I. PATENS, *Soland. in Ait. Hort. Kew.* i. 59; *Ker in Bot. Mag.* t. 522; *Red. Lil.* t. 140.—I. filiformis, *Vent. Hort. Cels.* t. 48; *Red. Lil.* t. 30.—I. aristata, *Schneer, Ic.* t. 37.—I. flaccida, *Salisb. Prodr.* 37.—I. coccinea, *Thunb. Fl. Cap.* i. 241, ex parte. *C. B. Spei.*

13. I. SPECIOSA, *Andr. Bot. Rep.* t. 126.—I. crateroides, *Ker in Bot. Mag.* t. 594.—I. coccinea, *Thunb. Fl. Cap.* i. 241, ex parte.—I. patens, var. kermesina, *Regel, Gartenfl.* t. 356.—I. pulcherrima, *Eckl. Verz. Top.* 24. *C. B. Spei.*

*** *Grandifloræ maculatæ.*

14. I. MACULATA, *Linn. Sp. Plant.* 1664; *Jacq. Hort. Schœn.* t. 21 (formæ permultæ).—I. Milleri, *Berg. Fl. Cap.* 8.—I. abbreviata, *Houtt, Handl.* xii. t. 78. fig. 3.—I. conica, *Salisb. Prodr.* 36; *Red. Lil.* t. 138; *Ker in Bot. Mag.* t. 539.—I. dubia, *Vent. Choix,* t. 10; *Red. Lil.* t. 64.—I. capitata, *Andr. Bot. Rep.* t. 50; *Miller, Ic.* tab. 156. fig. 1. *C. B. Spei.*

Var. I. FUSCO-CITRINA, *Red. Lil.* t. 86. *C. B. Spei.*

Var. OCHROLEUCA, *Ker in Bot. Mag.* t. 1285.—Ixia ochroleuca, *Sweet, Hort. Brit.* edit. ii. 502.—I. capitata, var., *Andr. Bot. Rep.* t. 159.—I. albo-flavens, *Eckl. Verz. Top.* 27. *C. B. Spei.*

15. I. COLUMELLARIS, *Ker in Bot. Mag.* t. 630.—I. maculata, var., *Andr. Bot. Rep.* t. 256; *Jacq. Hort. Schœn.* t. 19, 20, 22 (formæ permultæ).—Wuerthia elegans, *Regel, Gartenfl.* t. 46. *C. B. Spei.*

Var. RHODOLARYNX, *Baker.*—I. columnaris, var. angustifolia, *Andr. Bot. Rep.* t. 392. *C. B. Spei.*

Var. RUBRO-CÆRULEA, *Baker*. *C. B. Spei.*

Var. RUBRO-LILACINA, *Baker*. *C. B. Spei.*

16. I. VIRIDIFLORA, *Lam. Ency.* iii. 340; *Red. Lil.* t. 466; *Lodd. Bot. Cab.* t. 1548.—I. viridis, *Thunb. Fl. Cap.* 62.—I. maculata, *Thunb. Diss.* No. 19, ex parte.—I. maculata, var. viridis, *Jacq. Hort. Schœn.* t. 23; *Ker in Bot. Mag.* t. 549.—I. spicata, var. viridi-nigra, *Andr. Bot. Rep.* t. 29.—I. spectabilis, *Salisb. Prodr.* 35.—I. pulchra, *Salisb. in Trans. Hort. Soc.* i. 320.—I. prasina, *Soland. in Herb. Banks. C. B. Spei.*

Var. I. CANA, *Eckl. Verz. Top.* 26.—I. maculata, var. amethystina, *Ker in Bot. Mag.* t. 789. *C. B. Spei.*

Var. CÆSIA.—I. maculata, var. cæsia, *Bot. Rep.* t. 530. *C. B. Spei.*

Subgenus II. EURYDICE, *Pers. Syn.* i. 48. *Filamenta prorsus coalita.*

17. I. MONADELPHA, *Delar. Diss.* 22; *Ker in Bot. Mag.* t. 607.—I. columnaris, *Salisb. Prodr.* 36; *Andr. Bot. Rep.* t. 203, 213, 250 (formæ variæ, posterior *I. grandiflora*, Pers. Syn. i. 48).—Galaxia ixiæflora, *Red. Lil.* t. 41 (*G. ramosa*, in textu). *C. B. Spei.*

18. I. CURTA, *Andr. Bot. Rep.* t. 564.—I. monadelpha, var. curta, *Ker in Bot. Mag.* t. 1378.—I columnaris, var. versicolor, *Andr. Bot. Rep.* t. 211.—I. vitellina, lutea, *et* pallide-flavens, *Eckl. Topog. Verz.* 24, 25, teste *Klatt*. *C. B. Spei.*

5. STREPTANTHERA, *Sweet.*

Sweet, Brit. Flow. Gard. t. 209.

Perianthium regulare, tubo brevi cylindrico apice dilatato, limbo late campanulato segmentis conformibus obovato-cuneatis flore expanso patulis. *Stamina* 3, ad faucem tubi æquilateraliter inserta, limbo duplo breviora, filamentis brevibus applanatis erectis, antheris oblongis basi profunde sagittatis. *Ovarium* triloculare, ovulis in lobulo plurimis; *stylus* filiformis ex tubo protrusus, stigmatibus parvis obovatis emarginatis. *Capsula* parva membranacea loculicide trivalvis, seminibus lævibus globosis. *Herbæ Capenses bulbosæ, bulbi tunicis fibrosis, foliis brevibus linearibus flabellato-distichis, spicis paucifloris, spathæ valvis duabus latis membranaceis brunneo punctatis et lineolatis apice dentatis tubo longioribus.*

1. S. ELEGANS, *Sweet, Brit. Flow. Gard.* t. 209; *Lodd. Bot. Cab.* t. 1359. *C. B. Spei.*

2. S. CUPREA, *Sweet, Hort. Brit.* edit. 2, 501; *Brit. Flow. Gard.* ser. ii. t. 122; *Paxt. Mag.* i. 8, *cum icone.*—Sparaxis cuprea, *Klatt in Linnæa,* xxxv. 378. *C. B. Spei.*

6. GEISSORHIZA, *Ker.*

Ker in Bot. Mag. sub t. 672; *Gen. Irid.* 83; *Klatt in Linnæa,* xxxiv. 650.—Rochea, *Salisb. in Trans. Hort. Soc.* i. 322 (nomen). —Weihea, *Ecklon, Top. Verz.* 22 (nomen).—Ixiæ sp., *Thunb. etc.*

Perianthium regulare infundibulare, tubo brevi cylindrico sursum vix ampliato spatha plerumque vix breviore, segmentis 6 oblongis conformibus diu ascendentibus. *Stamina* 3, ad faucem tubi æquilateraliter inserta, filamentis brevibus subulatis, antheris oblongis basifixis. *Ovarium* sessile triloculare, ovulis in loculo pluribus horizontalibus; *stylus* filiformis erectus ex tubo protrusus, ramis stigmatosis parvis falcatis clavatis integris. *Capsula* parva, oblonga, chartacea, loculicide trivalvis, seminibus globosis, testa membranacea brunnea, albumine carneo. *Herbæ bulbosæ, bulbi parvi tunicis brunneis duris sæpe e basi in segmenta linearia multiserialiter imbricata sectis, foliis sæpe tribus angustis superpositis, superiore basi dilatata caulem amplectente, floribus paucis in spicas secundas dispositis, spathæ valvis oblongis integris viridibus vel apice scariosis tubum perianthii prorsus involventibus.*

Sect. I. ROCHEA. *Tubus perianthii ex spatha haud exsertus.*

* *Triphyllæ parvifloræ.*

1. G. HUMILIS, *Ker in König & Sims, Ann.* i. 223.—Ixia humilis, *Thunb. Diss.* No. 4.—G. setacea β, *Ker in Bot. Mag.* t. 1255.—G. Brehmii, *Eckl. Top. Verz.* 21; *Klatt in Linnæa,* xxxiv. 653.—G. aurea, *Eckl. Top. Verz.* 21, teste *Klatt. Cap. B. Spei.*

2. G. JUNCEA, *Link, Unio, Itin.* No. 314.—Ixia juncea, *Link, Enum.* 50. *C. B. Spei.*

3. G. PURPUREO-LUTEA, *Baker in Trimen, Journ.* 1876, 238. *C. B. Spei.*

4. G. ERECTA, *Baker in Trimen, Journ.* 1876, 238. *C. B. Spei.*

5. G. SECUNDA, *Ker in König & Sims, Ann.* i. 223.—Ixia secunda, *Delaroche, Descr.* 17; *Bot. Mag.* t. 597, *non Houttuyn.*—I. pusilla, *Andr. Bot. Rep.* t. 245.—I. scillaris, *Thunb. Diss.* No. 14.—G. imbricata, *E. Meyer in Herb. Drege. C. B. Spei.*

Var. G. RAMOSA, *Klatt in Linn.* xxxiv. 657.—Ixia ramosa, *Ker in Bot. Mag.* sub t. 549. *C. B. Spei.*

Var. G. SETIFOLIA, *Eckl. Topog. Verz.* 22. *C. B. Spei.*

6. G. HIRTA, *Ker in König & Sims, Ann.* i. 223.—Ixia hirta, *Thunb. Diss.* No. 6. *C. B. Spei.*

7. G. FILIFOLIA, *Baker in Trimen, Journ.* 1876, 238. *C. B. Spei.*

8. G. WRIGHTII, *Baker in Trimen, Journ.* 1876, 238. *C. B. Spei.*

*** Triphyllæ grandifloræ.*

9. G. FURVA, *Ker in König & Sims, Ann.* i. 224.—Ixia furva, *Soland. in Herb. Banks. C. B. Spei.*

10. G. ROCHENSIS, *Ker in König & Sims, Ann.* i. 223.—Ixia Rochensis, *Ker in Bot. Mag.* t. 598.—I. radians, *Thunb. Fl. Cap.* i. 217, ex parte.—I. monanthos, *Thunb. Fl. Cap.* edit. 2, 57.—Geissorhiza Rocheana et monantha, *Sweet, Hort. Brit.* edit. 2, 503.—G. setacea *a*, *Ker in Bot. Mag.* sub t. 1255.—G. secunda, *Houtt. Handl.* xii. t. 78. fig. 1, *non Delaroche.*—Rochea venusta, *Salisb. in Trans. Hort. Soc.* i. 322. *C. B. Spei.*

11. G. CILIARIS, *Salisb. in Trans. Hort. Soc.* i. 321.—G. quinquangularis, *Ecklon in Unio, Itin.* No. 312; *Klatt in Linnæa,* xxxiv. 654.—G. rosea, *Eckl. Top. Verz.* 20.—Hesperantha quinquangularis, *Eckl. Top. Verz.* 23. *C. B. Spei.*

12. G. IMBRICATA, *Ker in König & Sims, Ann.* i. 224.—Ixia imbricata, *Delaroche, Diss.* 17.—G. arenaria, *Eckl. Top. Verz.* 21. *C. B. Spei.*

13. G. INFLEXA, *Ker in König & Sims, Ann.* i. 223.—Ixia inflexa, *Delaroche, Diss.* 15.—G. vaginata, *Sweet, Brit. Flow. Gard.* t. 138. *C. B. Spei.*

14. G. LATIFOLIA, *Baker.*—Ixia latifolia, *Delaroche, Diss.* No. 22. *C. B. Spei.*

15. G. OBTUSATA, *Ker in Bot. Mag.* t. 672.—Ixia obtusata, *Soland. in Herb. Banks.*—I. geminata, *Vahl, Enum.* ii. 68. *C. B. Spei.*

**** Polyphyllæ.*

16. G. ORNITHOGALOIDES, *Klatt in Linn.* xxxiv. 656.—G. romuleoides, *Eckl. Top. Verz.* 21. *C. B. Spei.*

17. G. BOJERI, *Baker in Trimen, Journ.* 1876, 239. *Madagascaria.*

18. G. ALPINA, *Hook. fil. in Journ. Linn. Soc.* vii. 223. *Montes Cameroon.*

19. G. SETACEA, *Baker, non Ker.*—Ixia setacea, *Thunb. Diss.* No. 13. —G. tabularis, *Eckl. MS.*—G. recurvifolia, *Klatt in Linn.* xxxiv. 655, excl. syn. *Red. C. B. Spei.*

20. G. GEMINATA, *E. Meyer in Herb. Drege. C. B. Spei.*

21. G. QUADRANGULA, *Ker, Gen. Irid.* 88.—Ixia quadrangula, *Delaroche, Diss.* 16. *C. B. Spei.*

22. G. LUTEA, *Eckl. Top. Verz.* 21. *C. B. Spei.*

23. G. FOLIOSA, *Klatt in Linnæa*, xxxiv. 658. *C. B. Spei.*

24. G. GRANDIS, *Hook. fil. in Bot. Mag.* t. 5877. *C. B. Spei.*

Sect. II. WEIHEA. *Tubus perianthii ex spatha distincte exsertus.*

25. G. MINIMA, *Baker in Trimen, Journ.* 1876, 239. *C. B. Spei.*

26. G. EXCISA, *Ker in König & Sims, Ann.* i. 223.—Ixia excisa, *Thunb. Diss.* No. 24, tab. 1. fig. 4; *Bot. Mag.* t. 584.—Weihea excisa, *Eckl. Top. Verz.* 22.—Ixia ovata, *Burm. Prodr. Cap.* 1 (anno 1768). *C. B. Spei.*

7. HESPERANTHA, *Ker.*

Ker in König et Sims, Ann. i. 224.—Ixiæ sp. *Thunb., etc.*

Perianthium regulare infundibulare, tubo cylindrico recto vel curvato, limbi segmentis conformibus oblongis vel obovatis. *Stamina* 3, ad faucem tubi æquilateraliter inserta, filamentis brevibus subulatis, antheris magnis ligulatis limbo brevioribus. *Ovarium* triloculare, ovulis in loculo crebris; *stylus* filiformis ex tubo vix vel haud exsertus, stigmatibus tribus integris subulatis. *Capsula* parva oblonga membranacea loculicide trivalvis, seminibus crebris triquetris, testa membranacea brunnea, albumine corneo. *Herbæ bulbosæ, bulbi basi planis, tunicis multis brunneis basi circumscissis, sæpe e basi in segmenta lanceolata imbricata sectis, foliis angustis planis graminoideis, floribus spicatis sæpe vespertinis, spathæ valvis duabus oblongis integris viridibus tubum involventibus. Ad* Geissorhizam *arcte accedit; præsertim differt antheris magnis, stylo incluso, stigmatibus magnis subulatis.*

* *Perianthii tubus rectus.*

1. H. HUMILIS, *Baker in Trimen, Journ.* 1876, 239. *C. B. Spei.*

2. H. CINNAMOMEA, *Ker in König & Sims, Ann.* i. 225; *Bot. Mag.* t. 1054.—Ixia cinnamomea, *Thunb. Diss.* No. 9, tab. 2, *non Andrews. C. B. Spei.*

3. H. PILOSA, *Ker in König & Sims, Ann.* i. 225; *Bot. Mag.* t. 1475. —Ixia pilosa, *Thunb. Diss.* No. 5. *C. B. Spei.*

4. H. GRAMINIFOLIA, *Sweet, Hort. Brit.* edit. 2, 503.—H. pilosa, var. nuda, *Ker in Bot. Mag.* t. 1254. *C. B. Spei.*

5. H. FALCATA, *Ker in König & Sims, Ann.* i. 224.—Ixia falcata, *Thunb. Diss.* No. 23, tab. 1; *Jacq. Ic.* t. 276; *Bot. Mag.* t. 566.—I. cinnamomea, *Andr. Bot. Rep.* t. 44, *non Thunb.* *C. B. Spei.*

6. H. PETITIANA, *Baker.*—Ixia Petitiana, *A. Rich. Fl. Abyss.* ii. 309.—Geissorhiza abyssinica, *Klatt in Linnæa,* xxxiv. 716, *non R. Br.* *Abyssinia.*

Var. H. UNIFLORA, *Hochst. in Schimp. Pl. Abyss.* no. 1239.—Ixia Hochstetteriana, *A. Rich. Fl. Abyss.* ii. 309. *Abyssinia.*

7. H. LONGITUBA, *Baker.*—Geissorhiza longituba, *Klatt in Linnæa,* xxxv. 383.—Ixia acuta, *Lichten. in Roem. & Schult. Syst. Veg.* i. 383?—Hesperantha acuta, *Ker, Gen. Irid.* 91? *C. B. Spei.*

8. H. RUBELLA, *Baker in Trimen, Journ.* 1876, 239. *C. B. Spei.*

9. H. BAURII, *Baker in Trimen, Journ.* 1876, 182. *Kaffraria.*

** *Perianthii tubus decurvatus.*

10. H. RADIATA, *Ker in König & Sims, Ann.* i. 224.—Ixia radiata, *Jacq. Ic.* t. 280; *Ker in Bot. Mag.* t. 573; *Red. Lil.* t. 441.—I. fistulosa, *Andr. Bot. Rep.* t. 59.—Gladiolus recurvatus, *Thunb. Diss.* No. 3.—Ixia recurva, *Vahl, Enum.* ii. 58. *C. B. Spei.*

Var. CARICINA, *Ker in Bot. Mag. sub* t. 573; *Bot. Mag.* t. 790.—Hesperantha setacea, *Eckl. Top. Verz.* 22. *C. B. Spei.*

11. H. ANGUSTA, *Ker in König & Sims, Ann.* i. 225.—Ixia angusta, *Willd. Sp. Plant.* i. 202.—I. radiata, var. angusta, *Ker in Bot. Mag. sub* t. 573.—I. linearis, *Jacq. Ic.* t. 279, *non Thunb.*—Hesperantha virginea, *Ker in König & Sims, Ann.* i. 224.—Ixia virginea, *Soland. in Herb. Banks.* *C. B. Spei.*

12. H. BULBIFERA, *Baker in Trimen, Journ.* 1876, 182. *C. B. Spei.*

8. MORPHIXIA, *Ker.*

Ker, Gen. Irid. 105.—Hyalis, *Salisb. in Trans. Hort. Soc.* i. 317 (*nomen*).—Ixiæ sp., *Delaroche etc.*

Perianthium regulare, tubo recto brevi vel elongato cylindrico, collo turbinato, segmentis æqualibus anguste oblongis obtusis flore expanso subpatulis. Stamina 3 in parte dilatata tubi æquilateraliter inserta, filamentis brevibus rectis filiformibus, antheris basifixis oblongis. Ovarium triloculare, ovulis in loculo plurimis horizontalibus; stylus filiformis ex tubo sæpe protrusus, stigmatibus tribus brevibus falcatis clavatis integris. Capsula parva oblonga chartacea 6-sulcata, seminibus crebris triquetris, testa atro-castanea, albumine corneo. *Herbæ bulbosæ Capenses,*

bulbi tunicis membranaceis, foliis paucis graminoideis caule brevioribus, floribus spicatis sæpe paniculatis, spathæ valvis duabus parvis membranaceis, exteriore tricuspidata, interiore angustiore bicuspidata.

* *Brevicolles.*

1. M. CAPILLARIS, *Ker, Gen. Irid.* 106.—Ixia capillaris, *Thunb. Diss.* No. 12, t. 2. fig. 2; *Ker in Bot. Mag.* t. 617.—I. rapunculoides, *Red. Lil.* t. 431.—I. striata, *Vahl, Enum.* ii. 65.—Hyalis latifolia, *Salisb. in Trans. Hort. Soc.* i. 317. *C. B. Spei.*

Var. INCARNATA.—Ixia incarnata, *Jacq. Ic.* t. 282.—Morphixia incarnata, *Ker, Gen. Irid.* 107.—I. capillaris, var. incarnata, *Ker in Bot. Mag. sub* t. 570. *C. B. Spei.*

Var. LANCEA.—Ixia lancea, *Jacq. Ic.* t. 281.—Hyalis marginifolia, *Salisb. in Trans. Hort. Soc.* i. 318. *C. B. Spei.*

2. M. LINEARIS, *Ker, Gen. Irid.* 106.—Ixia linearis, *Thunb. Diss.* No. 11.—I. capillaris, var. gracillima, *Ker, in Bot. Mag.* t. 570.—Hyalis gracilis, *Salisb. in Trans. Hort. Soc.* i. 517.—I. tenuifolia, *Vahl, Enum.* ii. 62. *C. B. Spei.*

3. M. AULICA, *Ker, Gen. Irid.* 107.—I. aulica, *Soland. in Ait. Hort. Kew.* i. 57.—I. capillaris, var. aulica, *Ker, in Bot. Mag.* t. 1013.—Hyalis aulica, *Salisb. in Trans. Hort. Soc.* i. 318.—I. phlogiflora, *Red. Lil.* t. 432. *C. B. Spei.*

4. M. ODORATA, *Baker.*—Ixia odorata, *Ker, Gen. Irid.* 101.—I. erecta, var. lutea odorata, *Ker in Bot. Mag.* t. 1173.—I. erecta, *Jacq. Hort. Schœn.* t. 18, fig. minor. *C. B. Spei.*

5. M. TRICHORHIZA, *Baker in Trimen, Journ.* 1876, 237. *Natal.*

** *Longicolles.*

6. M. PANICULATA, *Baker, Fl. Maur.* 365.—Ixia paniculata, *Delaroche, Diss.* 26, t. 1.—I. longiflora, *Berg. Pl. Cap.* 7; *Bot. Mag.* t. 256; *Red. Lil.* t. 256.—Gladiolus longiflorus, *Thunb. Diss.* No. 22; *Jacq. Coll.* v. 23, t. 7.—Tritonia longiflora, *Ker in König & Sims, Ann.* i. 228; *Bot. Mag.* t. 1502. fig. dextra.—Hyalis longiflora, *Salisb. in Trans. Hort. Soc.* i. 318.—Freesea longiflora, *Eckl. Top. Verz.* 30.—Gladiolus ixioides, *Thunb. Fl. Cap.* edit. 2, 52. *C. B. Spei.*

Var. TENUIFLORA.—Tritonia tenuiflora, *Ker in Bot. Mag. sub* t. 1275.—Ixia tenuiflora, *Vahl, Enum.* ii. 266.—Gladiolus longiflorus, *Jacq. Ic.* t. 263.—Tritonia longiflora, var., *Ker in Bot. Mag.* t. 1502. fig. sinistra.—T. concolor, *Sweet, Brit. Flow. Gard.* edit. ii. 502. *C. B. Spei.*

Var. ROCHENSIS.—Tritonia rochensis, *Ker, Bot. Mag.* t. 1503, excl. syn. *C. B. Spei.*

7. M. COOPERI, *Baker in Trimen, Journ.* 1876, 237. *C. B. Spei.*

8. M. NERVOSA, *Baker in Trimen, Journ.* 1876, 237. *C. B. Spei.*

9. M. JUNCIFOLIA, *Baker in Trimen, Journ.* 1876, 238. *C. B. Spei.*

9. SPARAXIS, *Ker.*

Ker in König & Sims, Ann. i. 225, excl. sp.; *Gen. Irid.* 91, excl. sp.; *Klatt in Linnæa*, xxxii. 747.—Ixiæ sp. *Linn. etc.*

Perianthium regulare, infundibulare, tubo erecto brevi dimidio inferiore cylindrico, dimidio superiore conico, segmentis oblongis obtusis æqualibus diu ascendentibus. *Stamina* 3 prope medium tubi æquilateraliter inserta, filamentis brevibus filiformibus, antheris magnis ligulatis basifixis. *Ovarium* 3-loculare, ovulis in loculo crebris horizontalibus; stylus filiformis, ex tubo protrusus, stigmatibus tribus magnis falcatis subulatis integris. *Capsula* parva, membranacea, oblongo-globosa, loculicide trivalvis, seminibus crebris triquetris, testa membranacea atrocastanea, albumine corneo. *Herbæ bulbosæ capenses, bulbi tunicis permultis subtiliter fibroso-reticulatis, foliis plurimis radicalibus linearibus flabellato-distichis caule brevioribus, caule brevi foliis* 1–2 *similibus reductis prædito, spicis paucifloris raro paniculatis, floribus speciosis versicoloribus, spathæ valvis duabus membranaceis brunneo lineatis et punctatis, ab apice profunde fimbriatis, dentibus lineari-subulatis brunneis, exteriore latissima tubum amplectente, interiore angustiore lanceolata.*

1. S. BULBIFERA, *Ker in König & Sims, Ann.* i. 226.—Ixia bulbifera, *Linn. Sp. Plant.* ii. 51; *Ker in Bot. Mag.* t. 545; *Red. Lil.* t. 128; *Andr. Rep.* t. 48.—I. bulbifera, var. flava, *Thunb. Diss.* no. 16.—I. anemonæflora, *Red. Lil.* t. 85; *Miller, Ic.* 158, tab. 286. fig. 2. *C. B. Spei.*

2. S. GRANDIFLORA, *Ker in König & Sims, Ann.* i. 225; *Bot. Mag.* t. 779; *Bot. Reg.* t. 258.—Ixia grandiflora, *Delar. Diss.* 23; *Houtt. Handl.* xii. 37, tab. 77. fig. 3; *Ker in Bot. Mag.* t. 541; *Red. Lil.* tab. 179, 362.—I. bulbifera, *Thunb. Diss.* No. 16, *ex parte.*—I. aristata, *Soland. in Ait. Hort. Kew.* i. 57; *Andr. Bot. Rep.* t. 87, *non Thunb.*—I. holosericea, *Jacq. Hort. Schoen.* i. 9, t. 17.—I. monanthos, *Delar. Diss.* 24, *non Thunb.*—I. uniflora, *Linn. Mant.* 27; *Jacq. Ic.* t. 283.—S. fimbriata, *Ker in König & Sims, Ann.* i. 226.—Ixia fimbriata, *Lam. Ency.* iii. 339.—Belemcauda semiflexuosa, *Moench. Meth. Suppl.* 214.—S. lacera, *Ker in König & Sims, Ann.* i. 226. *C. B. Spei.*

Var. S. LILIAGO, *Sweet, Hort. Brit.* edit. 2, 501.—S. grandiflora, var. Liliago, *Bot. Reg.* t. 258.—Ixia Liliago, *Red. Lil.* t. 109. *C. B. Spei.*

Var. S. STELLARIS, *D. Don in Sweet, Brit. Flow. Gard.* ser. ii. t. 383, *C. B. Spei.*

Var. S. LINEATA, *Sweet, Brit. Flow. Gard.* ser. ii. t. 131. *C. B. Spei.*

3. S. TRICOLOR, *Ker in König & Sims, Ann.* i. 225; *Ker in Bot. Mag.* t. 1482.—Ixia tricolor, *Curt. Bot. Mag.* t. 381; *Schneev. Ic.* t. 39; *Red. Lil.* t. 129. *C. B. Spei.*

Var. S. VERSICOLOR, *Sweet, Brit. Flow. Gard.* t. 160. *C. B. Spei.*

Var. S. GRIFFINI, *Sweet, Hort. Brit.* edit. ii. 501.—S. tricolor, var. violaceo-purpurea, *Ker in Bot. Mag.* t. 1482. fig. inf. *C. B. Spei.*

Var. S. BLANDA, *Sweet, Hort. Brit.* edit. ii. 501.—S. tricolor, var. subroseo-albida, *Ker in Bot. Mag.* t. 1482. fig. med.

10. DIERAMA, *K. Koch.*

K. Koch in Walp. Ann. vi. 42; *Klatt in Linnæa,* xxxii. 751 (Dierama).—Sparaxis sp., *Ker.*—Ixiæ sp., *Thunb.*

Perianthium regulare infundibulare, tubo brevi e basi ad apicem sensim ampliato, segmentis oblongis obtusis conformibus diu ascendentibus. *Stamina* 3, in tubo æquilateraliter inserta, limbo distincte breviora, filamentis filiformibus, antheris ligulatis basifixis. *Ovarium* triloculare, ovulis in loculo pluribus; stylus filiformis rectus, ex tubo protrusus, ramis stigmatosis tribus falcatis brevibus clavatis integris. *Capsula* parva globoso-turbinata, membranacea, seminibus in loculo circiter 6 triquetris, testa brunnea, albumine corneo. *Herbæ bulbosæ, bulbi magni tunicis permultis apice setiferis in fibras parallelas solutis, foliis radicalibus multis longis duris anguste ensiformibus, caule longissimo gracili, spicis laxe paniculatis ramis capillaribus, floribus concoloribus, spathæ valvis magnis oblongo-lanceolatis membranaceis pallidis eroso-laceris.*

1. D. PENDULA, *Baker.*—Ixia pendula, *Thunb. Diss.* no. 16.—Sparaxis pendula, *Ker in Bot. Mag.* sub t. 1482; *Bot. Reg.* t. 1360.—Dierama ensifolium, *K. Koch & Bouché in Walp. Ann.* vi. 43.—Watsonia palustris, *Pers. Syn.* i. 45. *C. B. Spei et Natalia.*

2. D. PULCHERRIMA, *Baker.*—Sparaxis pulcherrima, *Hook. fil. in Bot. Mag.* t. 5555.—S. atropurpurea, *Hort.*—*C. B. Spei et Transvaal.*

11. HEXAGLOTTIS, *Vent.*

Vent. Dec. No. 3.—Moræa *et* Ixiæ sp. auct.

Perianthium regulare rotatum flavum, tubo supra ovarium brevi recto filiformi, segmentis 6 oblongo-ligulatis flore expanso patulis post anthesin spiraliter tortis. *Stamina* 3, ad faucem tubi æquilateraliter inserta, limbo multo breviora, filamentis subulatis, antheris oblongis spiraliter tortis, connectivo angusto. *Ovarium* cylindricum 6-sulcatum triloculare, ovulis in loculo crebris horizontalibus ; stylus ex tubo haud exsertus, stigmatibus 6 subulatis patulis antheris æquilongis. *Capsula* nigra crustacea cylindrica operculata, apice loculicide trivalvis, seminibus minutis angulatis, testa nigra. *Herbæ bulbosæ Capenses, tunicis e basi in segmenta linearia nigra sectis, apice setosis, foliis duobus angustis duris persistentibus, spathis cylindricis multifloris in spicas elongatas dispositis, valvis duris linearibus acutis, pedicellis ex spatha protrusis, floribus successivis fugacibus.*

1. H. LONGIFOLIA, *Vent. Decad.* 6.—Ixia longifolia, *Jacq. Hort. Vind.* iii. 47, t. 90 (1776).—Moræa flexuosa, *Linn. fil. Suppl.* 100; *Ker in Bot. Mag.* t. 695.—Sisyrinchium flexuosum, *Spreng. Syst. Veg.* i. 167.—Hexaglottis flexuosa, *Sweet, Hort. Brit.* edit. ii. 498.—Homeria flexuosa, *Baker in Ref. Bot.* t. 24.—Moræa longifolia, *Pers. Syn.* i. 49. *C. B. Spei.*

2. H. VIRGATA, *Sweet, Hort. Brit.* edit. 2, 498.—Moræa virgata, *Jacq. Ic.* t. 228.—Ixia virgata, *Willd. Sp. Plant.* i. 202. *C. B. Spei.*

12. ELEUTHERINE, *Herbert.*

Herb. in Bot. Reg. xxix. sub t. 57.—Galatea, *Salisb. in Trans. Hort. Soc.* i. 310 (nomen).

Perianthium regulare rotatum album, tubo supra ovarium nullo, segmentis 6 obovatis flore expanso patulis, interioribus paulo minoribus. *Stamina* 3 vel 6 epigyna limbo breviora, filamentis erectis brevissimis subulatis, antheris ligulatis basifixis. *Ovarium* clavatum triloculare, ovulis in loculo plurimis crebris horizontalibus ; stylus brevissimus triqueter, stigmatibus tribus erectis subulatis integris. *Capsula* cylindrica 6-sulcata cartilaginea operculata ex apice loculicide trivalvis, seminibus globosis, testa brunnea, albumine corneo. *Herbæ bulbosæ americanæ, tunicis multis membranaceis castaneis, foliis paucis petiolatis latis plicis multis, caule elongato apice florifero geniculato, spathis paucis oblongis pedunculatis multifloris, valvis multis scariosis viridibus arcte imbricatis, pedicellis spatha brevioribus, floribus fugitivis successivis.*

1. E. PLICATA, *Herb. loc. cit.*—Moræa plicata, *Swartz, Fl. Ind. Occ.* 82.

—Marica plicata, *Ker in Bot. Mag.* t. 655.—Galatea plicata, *Salisb. loc. cit.*—Cipura plicata, *Griseb. Flor. Brit. West Ind.* 589.—Sisyrinchium palmifolium, *Linn. herb. ex parte*; *Cav. Diss.* vi. 348, t. 19. fig. 1; *Red. Lil.* t. 352.—Moræa palmifolia, *Jacq. Ic.* t. 227.—Ixia americana, *Aublet, Guian.* i. 33.—Ferraria parviflora, *Salisb. Prodr.* 43.—Sisyrinchium latifolium, *Swartz, Prodr.* 17.—S. bulbosum, *Miller, Dict.* No. 3. *America tropicalis.*

2. **E. ANOMALA**, *Herb. loc. cit. America tropicalis.*

13. CALYDOREA, *Herbert.*

Herb. in Bot. Reg. 1843, *Misc.* 85.—Botherbe, "*Steud.*," *Klatt in Linnæa*, xxxi. 562.—Roterbe, *Klatt in Flor. Bras.* iii. 543, tab. 71. fig. 4, *non Steud.*—Sisyrinchii sp., *Hook. etc.*

Perianthium regulare rotatum cæruleum vel flavum, tubo supra ovarium nullo, segmentis obovatis subconformibus, flore expanso patulis. *Stamina* 3 epigyna æquilateralia, filamentis liberis subulatis basi deltoideis, antheris ligulatis, connectivo angusto, post anthesin spiraliter tortis. *Ovarium* turbinatum triloculare, ovulis in loculo crebris; *stylus* brevis filiformis, ramis tribus subulatis apice stigmatoso sæpissime minute emarginatis. *Capsula* clavata membranacea apice operculata loculicide trivalvis, seminibus crebris triquetris, testa lucida nigra. *Herbæ bulbosæ americanæ tropicales, bulbi tunicis membranaceis brunneis, foliis linearibus vel teretibus, spathis paucis paucifloris pedunculatis, valvis membranaceis viridibus acutis lanceolatis vel linearibus, pedicellis sæpissime demum protrusis, floribus fugitivis successivis.*

* *Cæruleæ, styli ramis elongatis.*

1. **C. SPECIOSA**, *Herb. in Bot. Reg.* 1843, *Misc.* 65.—Sisyrinchium speciosum, *Hook. in Bot. Mag.* t. 3544.—S. xiphioides, *Pöppig, Fragm. Synops.* 7.—Botherbe bulbosa, *Klatt in Linnæa*, xxxi. 563 (*non* Roterbe bulbosa, *Steudel*). *Chili.*

2. **C. CAMPESTRIS**, *Baker in Trimen, Journ.* 1876, 187.—Botherbe campestris, *Klatt in Linnæa*, xxi. 563.—Roterbe campestris, *Klatt, Fl. Bras.* iii. 543. *Brasilia meridionalis et Monte Video.*

3. **C. GARDNERI**, *Baker in Trimen, Journ.* 1876, 188. *Brasilia in ditione Piauhy.*

4. **C. TEXANA**, *Baker in Trimen, Journ.* 1876, 188.—Gelasine? texana, *Herbert in Bot. Mag. sub* t. 3779. *Texas.*

** *Luteæ, styli ramis elongatis.*

5. C. LUTEOLA, *Baker in Trimen, Journ.* 1876, 188.—Botherbe luteola, *Klatt in Linnæa,* xxxi. 563.—Roterbe luteola, *Klatt in Fl. Bras.* iii. 544, tab. 71. fig. 4. *Brasilia meridionalis.*

6. C. FURCATA, *Baker in Trimen, Journ.* 1876, 188.—Nemostylis furcata, *Klatt in Linnæa,* xxxi. 560; *Fl. Bras.* iii. 515, t. 65. *Monte Video.*

*** *Cæruleæ, styli ramis brevissimis.*

7. C. NUDA, *Baker in Trimen, Journ.* 1876, 188.—Gelasine? nuda, *Herbert in Bot. Mag. sub* t. 3779.—Botherbe gracilis, *Klatt in Linnæa,* xxxi. 565.—Roterbe gracilis, *Klatt in Fl. Bras.* iii. 544. *Monte Video.*

8. C. PUNCTATA, *Baker in Trimen, Journ.* 1876, 188.—Gelasine punctata, *Herbert in Bot. Mag. sub* t. 3779. *Mexico.*

14. CARDIOSTIGMA, *Baker.*

Perianthium regulare cæruleum rotatum, tubo supra ovarium nullo, segmentis conformibus obovato-cuneatis obtusis flore expanso patulis. *Stamina* 3 æquilateralia epigyna, filamentis brevibus subulatis, antheris ligulatis luteis connectivo angusto. *Ovarium* clavatum triloculare, ovulis in loculo crebris; *stylus* filiformis stamina superans, stigmatibus tribus planis obcordato-cuneatis margine fimbriatis. *Capsula* clavata apice operculata. *Herba bulbosa Mexicana, bulbi tunicis membranaceis brunneis, folio unico basali anguste lineari plicato, spathis solitariis terminalibus bifloris, valva exteriore longissima flores longe superante foliiformi, floribus fugitivis successivis.*

C. LONGISPATHA, *Baker.*—Gelasine longispatha, *Herbert in Benth. Pl. Hartweg.* 53.—Botherbe longispatha, *Klatt in Linnæa,* xxxi. 564.—Calydorea longispatha, *Baker in Trimen, Journ.* 1876, 188. *Mexico.*

15. NEMASTYLUS, *Nuttall.*

Nuttall in Amer. Phil. Trans. ser. nov. v. 157.—Eustylus, *Engel. & A. Gray, Pl. Lindh.* 28.—Ixiæ sp., *Bartram etc.*

Perianthium regulare rotatum cæruleum, tubo supra ovarium nullo, segmentis obovato-cuneatis obtusis subconformibus flore expanso patulis. *Stamina* 3 epigyna æquilateralia, filamentis brevissimis liberis basi valvatis deltoideis, antheris magnis ligulatis vel subpanduriformibus, connectivo angusto vel lato. *Ovarium* turbinatum, ovulis in loculo pluribus horizontalibus; *stylus* brevissimus filamentis æquilongus, ramis 6 subulatis patulis apice stigmatosis cæruleis. *Capsula* clavata apice operculata, seminibus crebris angulatis, testa brunnea. *Herbæ bulbosæ Americanæ boreales, bulbi tunicis membranaceis brunneis, foliis paucis petiolatis linearibus plicatis, spathis paucis paucifloris pedunculatis, valvis lanceolatis membranaceis viridibus acutis, pedicellis spatha æquilongis, floribus fugitivis successivis.*

Subgenus EUNEMASTYLUS. *Antheræ ligulatæ, connectivo angusto, post anthesin spiraliter tortæ.*

1. N. CŒLESTINUS, *Nuttall, loc. cit.*—Ixia cœlestina, *Bartr. Iter*, 152, t. 3.—Marica cœlestina, *Ker, Gen. Irid.* 19.—Beatonia cœlestina, *Klatt in Linnæa*, xxxi. 567. *Florida ad Carolinam.*

2. N. ACUTUS, *Herbert in Bot. Mag. sub* t. 3779.—Ixia acuta, *Bart. Flor. N. Amer.* i. 76.—N. geminiflora, *Nuttall, loc. cit. Arkansas et Texas.*

Subgenus EUSTYLUS (*Engel. & A. Gray*). *Antheræ subpanduriformes, connectivo lato, post anthesin rectæ.*

3. N. PURPUREUS, *Herbert in Bot. Mag. sub* t. 3779.—Eustylus purpureus, *Engel. & A. Gray, Pl. Lindh.* 27. *Texas et Louisiana.*

16. GALAXIA, *Thunb.*

Thunb. Nov. Gen. ii. 50, *cum icone*; *Ker, Gen. Irid.* 72; *Klatt in Linnæa*, xxxii. 782.

Perianthium regulare infundibulare, tubo cylindrico, limbo infundibulari, segmentis obovatis obtusis conformibus diu imbricatis et ascendentibus. *Stamina* 3, ad faucem tubi æquilateraliter inserta, filamentis sursum liberis deorsum in tubum cylindricum connatis, antheris ligulato-sagittatis basifixis. *Ovarium* oblongum, ovulis in loculo multis; *stylus* filiformis ex tubo protrusus, stigmate petaloideo peltato trilobato fimbriato. *Capsula* parva membranacea oblonga, seminibus multis globosis. *Herbæ bulbosæ Capenses, bulbi tunicis cancellatis apice fibrosis, caule supra terram nullo, foliis dense rosulatis angustis vel latis, floribus fugitivis cæruleis vel luteis in centro rosularum foliorum sessilibus, tubo ex spatha 1–2-valvi firma viridula ovato-lanceolata protruso.*

1. G. OVATA, *Thunb. loc. cit.*—Ixia Galaxia, *Linn. fil. Suppl.* 93. *C. B. Spei.*

Var. G. OBTUSA, *Salisb. in Trans. Hort. Soc.* i. 315.—G. ovata, *Andr.*

Bot. Rep. t. 94; *Jacq. Ic.* t. 291. fig. superior; *Thunb. icon. loc. cit.* *C. B. Spei.*

Var. G. GRANDIFLORA, *Salisb. in Trans. Hort. Soc.* i. 315; *Andr. Bot. Rep.* t. 164.—G. ovata, *Ker in Bot. Mag.* t. 1208. *C. B. Spei.*

Var. G. MUCRONULARIS, *Salisb. in Trans. Hort. Soc.* i. 315.—G. ovata, *Jacq. Ic.* t. 291. fig. inf. ad sinistram. *C. B. Spei.*

Var. G. VERSICOLOR, *Salisb. in Trans. Hort. Soc.* i. 315.—G. ovata, *Jacq. Ic.* t. 291. fig. inf. ad dextram.—G. violacea, *Eckl. Top. Verz.* 17. *C. B. Spei.*

2. G. GRAMINEA, *Thunb. loc. cit.*; *Jacq. Coll.* ii. t. 18. fig. 2; *Cav. Diss.* t. 189. fig. 3; *Ker in Bot. Mag.* t. 1292.—Ixia fugacissima, *Linn. fil. Suppl.* 94. *C. B. Spei.*

17. SPATALANTHUS, *Sweet.*

Sweet, Brit. Flow. Gard. t. 300.

Perianthium regulare infundibulare, tubo brevissimo infundibulari, segmentis oblongis acutis conformibus diu ascendentibus. *Stamina* 3 ad faucem tubo æquilateraliter inserta, filamentis in tubum brevem cylindricum prorsus coalitis, antheris ligulatis erectis basifixis. *Ovarium* globosum triloculare verrucosum, ovulis in loculo pluribus; *stylus* filiformis ex tubo protrusus, stigmatibus tribus ligulatis emarginatis. *Capsula* ignota. *Herba Capensis acaulis bulbosa, habitu omnino* Romuleæ, *bulbi tunicis fibrosis, foliis pluribus teretibus duris, floribus magnis solitariis speciosis pedunculatis terminalibus, spathæ valvis duabus lanceolatis firmis viridibus integris, perianthii segmentis more* Tulipæ *basi luteonigro maculatis.*

1. S. SPECIOSUS, *Sweet, loc. cit.*—Trichonema monadelphum, *Sweet, Hort. Brit.* edit. ii. 399. *C. B. Spei.*

18. HOMERIA, *Vent.*

Vent. Dec. Nov. Gen. No. 2; *Klatt in Linnæa,* 625.—Moreæ sp., *Thunb. etc.*

Perianthium regulare late infundibulare luteum vel miniatum, segmentis oblongis subconformibus obtusis vel acutis diu ascendentibus. *Stamina* 3 epigyna æquilateralia, filamentis in tubum cylindricum prorsus connatis, antheris ligulatis basifixis stigmatibus oppositis. *Ovarium* cylindricum 6-sulcatum, ovulis in loculo crebris; *stylus* filiformis columnæ filamentorum æquilongus, stigmatibus parvis ligulatis petaloideis apice cristis 2 deltoideis præditis. *Capsula* chartacea clavata 6-sulcata apice loculicide trivalvis, seminibus parvis crebris angulatis. *Herbæ bulbosæ Capenses, bulbi tunicis e basi in segmenta dura linearia nigra multa irregulariter imbricata sectis, foliis inferioribus elongatis anguste loratis duris nervatis bulbillis sæpe in axillis præditis, superioribus parvis bracteiformibus arcte imbricatis, spathis multis terminalibus multifloris, valvis duris angustis acutis arcte imbricatis, pedicellis elongatis, floribus magnitudine mediocribus successivis fugitivis.*

1. H. ELEGANS, *Sweet, Hort. Brit.* edit. ii. 498.—Moræa elegans, *Jacq. Hort. Schoen.* i. 6, t. 12.—Sisyrinchium elegans, *Willd. Sp. Plant.* i. 67.—M. spicata, *Ker in Bot. Mag.* t. 1283.—Homeria spicata, *Sweet, loc. cit. C. B. Spei.*

2. H. COLLINA, *Vent. Decad.* 5.—Moræa collina, *Thunb. Diss.* no. 13; *Jacq. Ic.* t. 226; *Ker in Bot. Mag.* t. 1033.—Sisyrinchium collinum, *Cav. Diss.* vi. 346; *Red. Lil.* t. 250.—S. elegans, *Red. Lil.* t. 171, *non Willd.*—Moræa grandiflora, *Eckl. Top. Verz.* 14. *C. B. Spei.*
Var. H. OCHROLEUCA, *Salisb. in Trans. Hort. Soc.* i. 308.—Moræa collina, var., *Ker in Bot. Mag.* t. 1103. *C. B. Spei.*
Var. H. MINIATA, *Sweet, Brit. Flow. Gard.* t. 152.—Moræa miniata, *Andr. Bot. Rep.* t. 404. *C. B. Spei.*

3. H. MACULATA, *Klatt in Linnæa,* xxxiv. 627. *C. B. Spei.*

4. H. LINEATA, *Sweet, Brit. Flow. Gard.* t. 178. *C. B. Spei.*
Var. H. PORRIFOLIA, *Sweet, Hort. Brit.* edit. ii. 498. *C. B. Spei.*

5. H. AURANTIACA, *Sweet, Hort. Brit.* edit. ii. 498.—Sisyrinchium aurantiacum, *Zuccag. in Rœm. & Schult. Syst. Veg.* i. 492.—Moræa collina, var. miniata minor, *Bot. Mag.* t. 1612. *C. B. Spei.*

19. FERRARIA, *Linn.*

Linn. Gen. no. 1818, ex parte; *Ker, Gen. Irid.* 27; *Klatt in Linnea,* xxxiv. 626.

Perianthium regulare, tubo supra ovarium nullo, segmentis ovato-lanceolatis distincte unguiculatis, unguibus in cupulam diu conniventibus, supra unguem margine undulatis flore expanso patulis vel reflexis. *Stamina* 3 epigyna, filamentis in tubum cylindricum coalitis, apice liberis, antheris oblongo-sagittatis. *Ovarium* cylindricum rostratum triloculare, ovulis in loculo crebris; *stylus* filiformis columnæ filamentorum subæquilongus; *stigmatibus* patulis petaloideis planis bifidis insigniter penicillatis. *Capsula* oblonga rostrata chartacea loculicide trivalvis, seminibus magnis crebris subglobosis, testa nigra. *Herbæ Capenses cormo magno tuberoso præditæ, foliis inferioribus paucis anguste loratis elongatis duris, caulibus dichotome ramosis foliis reductis multis ovato-lanceolatis amplexicaulibus bracteiformibus præditis, spathis magnis multifloris ventricosis valvis duris striatis oblongo-lanceolatis, pedicellis spatha brevioribus, floribus magnis fugitivis luride purpureis vel viridibus.*

* *Macroscyphæ, antherarum loculis divaricatis.*

1. F. FERRARIOLA, *Willd. Sp. Plant.* iii. 581.—Moræa Ferrariola, *Jacq. Hort. Schoen.* t. 456.—F. viridiflora, *Andr. Bot. Rep.* t. 285.—F. antherosa, *Ker in Bot. Mag.* t. 751.—F. minor, *Pers. Syn.* i. 50. *C. B. Spei.*

Var.? F. ANGUSTIFOLIA, *Sweet, Hort. Brit.* 499. *C. B. Spei.*

2. F. DIVARICATA, *Sweet, Brit. Flow. Gard.* t. 192. *C. B. Spei.*

** *Brachyscyphæ, antherarum loculis parallelis.*

3. F. UNDULATA, *Linn. Sp. Plant.* 1353; *Curt. Bot. Mag.* t. 144; *Red. Lil.* t. 28; *Jacq. Hort. Vind.* t. 63; *Cav. Ic.* t. 190. fig. 1.—Moræa undulata, *Thunb. Diss. Mor.* 14.—Ferraria punctata, *Pers. Syn.* i. 50; *Miller, Ic.* 187, t. 280. *C. B. Spei.*

4. F. UNCINATA, *Sweet. Brit. Flow. Gard.* t. 161. *C. B. Spei.*

5. F. OBTUSIFOLIA, *Sweet, Brit. Flow. Gard.* t. 148. *C. B. Spei.*

6. F. ATRATA, *Lodd. Bot. Cab.* t. 1356. *C. B. Spei.*

20. GELASINE, *Herbert.*

Herb. in Bot. Mag. t. 3779.

Perianthium regulare rotatum cæruleum, tubo supra ovarium nullo, segmentis obovato-cuneatis conformibus vel interioribus paulo minoribus. *Stamina* 3 æquilateralia epigyna, filamentis in tubum brevem prorsus connatis, antheris erecto-patentibus ligulatis basifixis. *Ovarium* turbinatum, ovulis in loculo multis crebris; *stylus* filiformis, ramis tribus erecto-patentibus subulatis. *Capsula* clavata apice operculata loculicide trivalvis, seminibus crebris angulatis, testa brunnea. *Herbæ bulbosæ Americanæ, bulbi tunicis brunneis membranaceis, foliis paucis linearibus plicatis, spathis paucis terminalibus pedunculatis multifloris, valvis lanceolatis acutis arcte imbricatis, pedicellis protrusis, floribus fugitivis successivis.*

1. G. AZUREA, *Herb. loc. cit.* *Banda orientalis.*

2. G. GRANDIFLORA, *Herb. loc. cit.* *Andes.*

3. G.? PURRUCHUCANA, *Herb. loc. cit.* *Andes.*

21. CHLAMYDOSTYLUS, *Baker.*

Baker in Trimen, Journ. 1876, 185.

Perianthium regulare rotatum cæruleum vel luteum, tubo supra ovarium nullo, segmentis obovatis obtusis conformibus flore expanso patulis. *Stamina* 3 æquilateralia epigyna, filamentis in tubum cylindricum prorsus connatis, antheris basifixis ligulatis connectivo angusto, vel panduriformibus connectivo lato. *Ovarium* clavatum triloculare, ovulis in loculo crebris; *stylus* brevis filiformis erectus, ramis 6 subulatis apice stigmatosis. *Capsula* clavata membranacea operculata apice loculicide trivalvis, seminibus congestis angulatis, testa brunnea. *Herbæ bulbosæ Americæ tropicalis, bulbi tunicis brunneis membranaceis, foliis* 1–2 *teretibus vel anguste linearibus plicatis, caulibus simplicibus vel furcatis foliis* 1–2 *reductis præditis, spathis segregatis terminalibus paucifloris pedunculatis, valvis lanceolatis viridulis arcte imbricatis, pedicellis floriferis sæpe protrusis, floribus fugitivis successivis.*

Subgenus EUCHLAMYDOSTYLUS. *Antheræ ligulatæ, connectivo angusto.*

1. C. BRACTEOLATUS, *Baker.*—Beatonia bracteolata, *Klatt in Linnæa,* xxxiv. 733. *Andes Boliviæ.*

2. C. TENUIS, *Baker in Trimen, Journ.* 1876, 185.—Nemastylis cœlestina, *Klatt in Linnæa,* xxxi. 567, ex parte. *Mexico.*

3. C. MULTIFLORUS, *Baker in Trimen, Journ.* 1876, 186.—Moræa foliosa, *H. B. K. Nov. Gen.* i. 322? *Mexico et Andes.*

Subgenus PLATYSTERIGMA. *Antheræ subpanduriformes vel oblongæ, connectivo lato.*

4. C. TRIFLORUS, *Baker.*—Nemastylis triflora, *Herbert in Benth. Pl. Hartweg.* 95.—C. cernua, *Baker in Trimen, Journ.* 1876, 186. *Mexico et Guatemala.*

5. C. MEDUSA, *Baker, in Trimen, Journ.* 1876, 186. *Brasilia in ditione Goyaz.*

22. SCHIZOSTYLIS, *Backh. et Harv.*

Backh. et Harv. in Bot. Mag. t. 5422.

Perianthium regulare rotatum, tubo supra ovarium cylindrico, segmentis rotatis oblongis conformibus flore expanso patulis. *Stamina* 3 ad faucem tubi inserta æquilateralia limbo breviora, filamentis subulatis, antheris magnis linearibus. *Ovarium* oblongum triloculare, ovulis in loculo crebris; *stylus* filiformis ex tubo haud protrusus, stigmatibus tribus magnis erecto-patentibus subulatis integris. *Capsula* parva oblonga loculicide trivalvis, seminibus crebris triquetris. *Herbæ Capenses haud bulbiferæ, radicibus dense cæspitosis fibroso-carnosis, foliis radicalibus flabellato-distichis graminoideis, floribus dense æquilateraliter spicatis, spathis unifloris, valvis duabus integris viridulis lanceolatis vel oblongis. Ab* Hesperantha *vix recedit nisi defectu bulbi.*

1. S. COCCINEA, *Back. & Harv. loc. cit. Natal, Transvaal, Kaffraria.*

2. S. PAUCIFLORA, *Klatt in Linnæa,* XXXV. 380.—S. ixioides, *Harv. MS. Natal, Transvaal, &c.*

23. WITSENIA, *Thunb.*

Thunb. Nov. Gen. ii. 34, cum icone; *Ker, Gen.* 7, ex parte; *Klatt in Linnæa,* 34, 545, ex parte.—Antholyzæ sp., *Linn.*

Perianthium infundibulare regulare viridulum persistens, tubo supra ovarium elongato cylindrico e basi ad faucem sensim ampliato, segmentis 6 lingulatis diu ascendentibus, exterioribus supra medium dorso fulvo-tomentosis, interioribus apice solum fulvo-tomentosis. *Stamina* 3, ad faucem tubi æquilateraliter inserta, filamentis applanatis, antheris magnis lanceolatis æquilongis. *Ovarium* oblongum triloculare, ovulis in loculo crebris; *stylus* filiformis perianthio æquilongus apice stigmatoso obscure tricuspidatus. *Capsula* parva turbinata glabra castanea in spatha occulta, seminibus paucis imbricatis discoideis, testa brunnea. *Frutex ramosus, caulibus lignosis acute ancipitibus, foliis caulinis multis distichis duris linearibus nervosis amplexicaulibus rectis, spathis* 1–2-*floris multis spicatis congestis, valvis pluribus magnis duris lanceolatis acutis coriaceis viridulis, exterioribus sensim brevioribus.*

1. W. MAURA, *Thunb. loc. cit.*; *Lam. Ill.* t. 30; *Red. Lil.* t. 245 & 463; *Bot. Reg.* t. 5; *Maund, Bot.* t. 125; *Flore des Serres,* t. 72; *Paxt. Mag.* viii. 221, *cum icone*; *Reich. Exot.* t. 23.—W. tomentosa,

Salisb. in Trans. Hort. Soc. i. 312.—Ixia disticha, *Lam. Ency.* iii. 333.—Antholyza maura, *Linn. Mant.* 175. *C. B. Spei.*

24. NIVENIA, *Ventenat.*

Ventenat, Decad. Nov. Gen. no. 1 (1808), non *R. Br.* (1809). —Genlisea, *Reich. Conspect.* 60.—Witsenia, *Ker, Gen.* 7, ex parte.—Ixiæ sp., *Thunb.*

Perianthium hypocrateriforme regulare glabrum cæruleum, tubo supra ovarium cylindrico, segmentis 6 oblongis obtusis æqualibus flore expanso patulis. *Stamina* 3 ad faucem tubi æquilateraliter inserta, filamentis brevibus subulatis, antheris minutis oblongis. *Ovarium* triloculare, ovulis in loculo pluribus; *stylus* filiformis cæruleus perianthio æquilongus, apice obscure tricuspidatus. *Capsula* parva oblongo-turbinata coriacea glabra brunnea, ex apice ad basin loculicide trivalvis, seminibus in loculo paucis oblongis turgidis. *Frutices Capenses parvi ramosi, ramis acute ancipitibus, foliis multis caulinis distichis confertis duris linearibus acutis amplexicaulibus, spathis* 1–2-*floris parvis corymbosis vel capitatis, valvis exterioribus obtusis brunneis coriaceis, interioribus majoribus membranaceis, floribus cæruleis fugitivis.*

1. N. CORYMBOSA, *Baker.*—Witsenia corymbosa, *Gawl. in Bot. Mag.* t. 895; *Smith, Exot. Bot.* t. 18; *Red. Lil.* t. 453; *Lodd. Bot. Cab.* t. 254; *Reich. Exot.* t. 24; *Paxt. Mag.* iii. 269, *cum icone*; *Maund. Bot.* v. 202.—N. stylosa, *Salisb. in Trans. Hort. Soc.* i. 311. *C. B. Spei.*

2. N. FRUTICOSA, *Baker.*—Ixia fruticosa, *Thunb. Diss. Ixia,* No. 1, t. 1. fig. 3; *Lam. Ill.* i. 108, t. 31. fig. 4.—Witsenia fruticosa, *Ker in König & Sims, Ann.* i. 237.—W. capitata, *Klatt in Linnæa,* xxxiv. 546.—W. ramosa, *Vahl, Enum.* ii. 47.—Aristea fruticosa, *Pers. Syn.* i. 41. *C. B. Spei.*

25. KLATTIA, *Baker.*

Witseniæ sp., *Ker.*

Perianthium cylindricum persistens cæruleum glabrum, tubo supra ovarium brevi cylindrico, segmentis 6 æqualibus longissimis diu ascendentibus apice anguste ligulatis, deorsum ungue elongato subulato præditis. *Stamina* 3 ad faucem tubi æquilateraliter inserta limbo paulo breviora, filamentis elongatis subulatis, antheris magnis ligulatis basifixis. *Ovarium* oblongum triloculare, ovulis in loculo pluribus crebris; *stylus* filiformis limbo æquilongus, apice stigmatoso minute tricuspidatus. *Capsula* parva oblonga glabra brunnea coriacea loculicide trivalvis, seminibus pluribus turgidis. *Frutex ramosus Capensis, habitu* Niveniæ, *ramis lignosis acute ancipitibus, foliis caulinis confertis distichis linearibus duris amplexicaulibus, floribus dense capitatis, glomerulis foliis reductis lineari-navicularibus magnis bracteatis, spathis singulis multo minoribus occultis* 1–2-*floris, valvis parvis scariosis inæqualibus lanceolatis.*

1. K. PARTITA, *Baker.*—Witsenia partita, *Ker in König & Sims, Ann.* i. 237. *C. B. Spei.*

26. ARISTEA, *Soland.*

Soland. in Ait. Hort. Kew. i. 67; *Ker, Gen. Irid.* 10; *Klatt in Linnæa,* xxxiv. 548.—Moræææ sp., *Thunb.*—Ixiæ sp., *Linn.*—Sisyrinchium *et* Wredowia, *Eckl. Topog. Verz.* 16—Cleanthe, *Salisb. in Trans. Hort. Soc.* i. 312.

Perianthium regulare rotatum cæruleum, tubo supra ovarium subnullo, segmentis conformibus vel in *Cleanthe* interioribus majoribus obovatis vel oblongis flore expanso patulis. *Stamina* 3 ad faucem æquilateraliter inserta, limbo multo breviora, filamentis subulatis, antheris ligulatis basifixis. *Ovarium* clavatum, triloculare, ovulis in loculo pluribus crebris; *stylus* filiformis, ex tubo longe protrusus rectus vel leviter declinatus, summo apice obscure tricuspidatus. *Capsula* oblonga vel cylindrica, dura, coriacea, sæpissime acute triquetra, seminibus discoideis vel globosis, testa castanea vel atrata. *Herbæ perennes Capenses et Africanæ tropicales, rhizomate brevi lignoso, fibris radicalibus copiosis duris gracilibus, foliis basalibus multis elongatis distichis duris linearibus vel subteretibus, caulinis pluribus reductis, inflorescentia corymboso-paniculata vel interdum spicata vel capitata, spathis oblongis multifloris ventricosis, valvis permultis imbricatis omnibus scariosis vel exterioribus viridulis, floribus fugitivis cæruleis post anthesin spiraliter tortis, capsulis in spatha sessilibus vel pedicellatis protrusis.*

Series I. Euaristea. *Perianthii segmenta conformia.*

* *Capsula parva sessilis obovoidea, lateribus rotundatis, seminibus globosis.*

1. A. anceps, *Ecklon; Klatt in Linnæa*, xxxiv. 550. *C. B. Spei et Abyssinia.*

2. A. madagascariensis, *Baker in Trimen, Journ.* 1876, 267. *Madagascaria.*

3. A. schizolæna, *Harv. MS.; Baker in Trimen, Journ.* 1876, 267. *C. B. Spei.*

4. A. angolensis, *Baker. Angola.*

** *Capsula oblonga acute triquetra breviter pedicellata, seminibus discoideis.*

5. A. juncifolia, *Baker in Trimen, Journ.* 1876, 267. *C. B. Spei.*

6. A. racemosa, *Baker in Trimen, Journ.* 1876, 267.—Witsenia spicata, *E. Meyer in Herb. Drege. C. B. Spei.*

7. A. dichotoma, *Ker, Gen. Irid.* 13, *non Klatt.*—Moræa dichotoma, *Thunb. Fl. Cap.* i. 266.—A. intermedia, *Ecklon, Top. Verz.* 16. *C. B. Spei.*

8. A. cyanea, *Soland. in Ait. Hort. Kew.* i. 67; *Andr. Bot. Rep.* t. 10; *Curt. in Bot. Mag.* t. 458; *Red. Lil.* t. 462.—Ixia africana, *Linn. Sp. Plant.* 51.—Moræa africana, *Thunb. Diss. Mor.* No. 3.—M. Aristea, *Lam. Ill.* 114.—Aristea eriophora, *Pers. Syn.* i. 41. *C. B. Spei.*

9. A. compressa, *Buching. in Krauss, Pl. Natal. Exsic.* No. 358. *Natalia.*

10. A. capitata, *Ker in Bot. Mag.* t. 605 (*excl. syn.*).—Gladiolus capitatus, *Linn. Sp. Plant.* 53.—Aristea major, *Andr. Bot. Rep.* t. 160. Moræa cærulea, *Thunb. Diss. Mor.* 15, tab. 2. fig. 2.—A. cærulea, *Vahl, Enum.* ii. 124.—A. spicata *et* bracteata, *Pers. Syn.* i. 41. *C. B. Spei.*

*** *Capsula cylindrico-triquetra, seminibus minutis turgidis.*

11. A. spiralis, *Ker in König & Sims, Ann.* i. 236.—Moræa spiralis, *Linn. Suppl.* 99; *Bot. Mag.* t. 520.—Sisyrinchium spirale, *Eckl. Top. Verz.* 16. *C. B. Spei.*

12. A. pusilla, *Ker in König & Sims, Ann.* i. 236; *Bot. Mag.* t. 123. —Moræa pusilla, *Thunb. Diss.* No. 4.—Sisyrinchium pusillum, *Eckl. C. B. Spei.*

13. A. **Eckloni**, *Baker*.—A. dichotoma, *Eckl.*; *Klatt in Linnæa*, xxxiv. 551, *non Ker*. *C. B. Spei*.

Series II. Cleanthe. *Perianthii segmenta interiora majora.*

14. A. **melaleuca**, *Ker in König & Sims, Ann.* i. 236; *Bot. Mag.* t. 1277.—Moræa melaleuca, *Thunb. Diss. Moræa*, No. 1, t. 1. fig. 3. —M. lugens, *Linn. fil. Suppl.* 99.—Cleanthe melaleuca, *Salisb. Trans. Hort. Soc.* i. 312.—Sisyrinchuim melaleucum *et* inundatum, *Eckl. Top. Verz.* 16. *C. B. Spei.*

Indescripta, mihi ignota.

15. A. **Wredowia**, *Steud. Nomencl.* edit. ii. 130.—W. pulchra, *Eckl. Topog. Verz.* 16. *C. B. Spei.*

27. ORTHROSANTHUS, *Sweet*.

Sweet, Fl. Austral. t. 12; *Benth. Fl. Austral.* vi. 410.—Sisyrinchii sp., *Lindl.* &c.—Morææ sp., *H. B. K.*

Perianthium regulare infundibulare cæruleum, tubo supra ovarium brevi vel brevissimo, segmentis 6 oblongis conformibus imbricatis. *Stamina* 3 ad faucem tubi æquilateraliter inserta, filamentis brevibus linearibus, antheris ligulatis. *Ovarium* oblongum triloculare, ovulis in loculo multis crebris; *stylus* brevis filiformis, e tubo haud protrusus, stigmatibus tribus erecto-patentibus subulatis integris, antheris alternis. *Capsula* chartacea oblongo-triquetra loculicide trivalvis, seminibus minutis angulatis, testa brunnea. *Herbæ perennes, rhizomate brevi lignoso, fibris radicalibus duris, foliis radicalibus multis distichis linearibus duris persistentibus, caulinis paucis similibus reductis, spathis oblongis multifloris spicatis vel paniculatis, valvis perplurimis, imbricatis, exterioribus viridibus, interioribus membranaceis, capsulis intra spathas inclusis subsessilibus vel breviter pedicellatis, floribus parvis fugitivis.*

* *Australienses.*

1. O. **multiflorus**, *Sweet. loc. cit.*; *Lodd. Bot.* t. 1474.—Sisyrinchium cyaneum, *Lindl. Bot. Reg.* t. 1090.—Libertia stricta, *Endl. in Pl. Preiss.* ii. 32? *Australia australis et occidentalis.*

2. O. **Muelleri**, *Benth. Fl. Austral.* vi. 411. *Australia occidentalis.*

3. O. **laxus**, *Benth. Fl. Austral.* vi. 411.—Libertia laxa, *Endl. in Pl. Preiss.* ii. 32. *Australia occidentalis.*

4. O. GRAMINEUS, *Benth. Fl. Austral.* vi. 411.—Libertia graminea, *Endl. in Pl. Preiss.* ii. 32. *Australia occidentalis.*

5. O. POLYSTACHYUS, *Benth. Fl. Austral.* vi. 411. *Australia occidentalis.*

** *Americanæ.*

6. O. SPICATUS, *Baker.*—Sisyrinchum spicatum, *Seubert, MS.*; *Klatt in Linnæa,* xxxi. 377. *Brasilia meridionalis.*

7. O. CHIMBORACENSIS, *Baker in Gard. Chron.* 1876, ii. 67.—Moræa chimboracensis et acorifolia, *H. B. K. Nov. Gen.* i. 322.—Sisyrinchium Moritzianum, *Klatt in Linnæa,* xxxi. 378.—Orthrosanthus Moritzianus, *Klotzch in Moritz, Exsic.* No. 1204. *Andes, ab Mexico ad Peruviam.*

Var. GLADIOLOIDES, *Baker.*—Moræa gladioloides, *H. B. K. Nov. Gen.* i. 322.—Sisyrinchium occisapungum, *Ruiz, MS.*; *Klatt in Linnæa,* xxxi. 379. *Andes.*

28. BELEMCANDA (*Rheede*).

Adans. Fam. ii. 60.—Pardanthus, *Ker in König et Sims, Ann.* i. 246.—Ixiæ sp., *Linn.*

Perianthium rotatum, subregulare, tubo supra ovarium nullo, segmentis oblongo-oblanceolatis unguiculatis flore expanso patulis, interioribus paulo minoribus, post anthesin spiraliter tortis. *Stamina* 3 epigyna limbo breviora æquilateraliter inserta, filamentis subulatis, antheris ligulatis basifixis. *Ovarium* triloculare clavatum, ovulis in loculo crebris; *stylus* filiformis, stigmatibus 3 erecto-patentibus applanatis apice reniformibus. *Capsula* magna coriacea oblongo-turbinata loculicide trivalvis, seminibus crebris globosis magnitudine pisi, testa crassa nigra, albumine corneo. *Herba asiatica orientalis, habitu* Iridis, *rhizomate crasso, foliis multis magnis distichis ensiformibus, caulinis similibus sensim minoribus, inflorescentia copiose dichotome corymbosa, spathis parvis multifloris, valvis multis oblongis scariosis, pedicellis protrusis apice articulatis, floribus speciosis fugitivis punctatis.*

1. B. CHINENSIS, *Leman in Red. Lil.* t. 121.—B. punctata, *Moench Meth.* 529.—Ixia chinensis, *Linn. Sp. Plant.* 52; *Trew, Ehret.* 23, t. 52; *Curt. in Bot. Mag.* t. 171.—Pardanthus chinensis, *Ker in König & Sims, Ann.* i. 246; *Flore des Serres,* t. 1632.—P. nepalensis, *Sweet, Brit. Flow. Gard.* edit. ii. 498. *Asia orientalis.*

29. BOBARTIA, *Linn.*

Linn. Gen. no. 71; *Ker, Ann. Irid.* 29; *Klatt in Linnea,* xxxiv. 554.—Moræœ sp., *Thunb. Diss. Moræa.*

Perianthium regulare rotatum flavum, tubo supra ovarium nullo, segmentis oblongis conformibus flore expanso patulis. *Stamina* 3 æquilateralia epigyna, filamentis brevissimis applanatis, antheris ligulatis. *Ovarium* turbinatum, ovulis in loculo pluribus; *stylus* brevissimus, stigmatibus tribus falcatis subulatis integris antheris alternis. *Capsula* dura turbinata 6-sulcata operculata, apice loculicide trivalvis, seminibus crebris magnis angulatis obscure alatis, testa nitida castanea, albumine corneo. *Herbæ Capenses altæ perennes rhizomatosæ, foliis duris persistentibus teretibus planis interdum rudimentariis, scapis aphyllis teretibus vel planis, spathis multis cylindricis in rosulam unicam densam congestis, valvis cartilagineis linearibus acuminatis viridibus arcte imbricatis, floribus aggregatis fugitivis successivis, pedicellis ac spatha æquilongis.*

1. B. APHYLLA, *Ker, Gen. Irid.* 30.—Marica aphylla, *Ker in Bot. Reg.* sub t. 229.—Moræa aphylla, *Linn. fil. Suppl.* 99; *Thunb. Diss. Moræa,* No. 9, tab. 2. fig. 1.—Sisyrinchium aphyllum, *Spreng. Syst. Veg.* i. 166. *C. B. Spei.*

2. B. FILIFORMIS, *Ker, Gen. Irid.* 30.—Marica filiformis, *Ker in Bot. Reg.* sub t. 229.—Moræa filiformis, *Linn. fil. Suppl.* 100; *Thunb. Diss. Moræa,* No. 10, tab. 2. fig. 2.—Sisyrinchum filiforme, *Spreng. Syst. Veg.* i. 166. *C. B. Spei.*

3. B. GLADIATA, *Ker, Gen. Irid.* 30.—Ixia gladiata, *Linn. fil. Supp.* 93.—Marica gladiata, *Ker in Bot. Reg.* t. 229.—Moræa gladiata, *Thunb. Diss. Moræa,* No. 8.—Sisyrinchium gladiatum, *Spreng. Syst. Veg.* i. 166. *C. B. Spei.*

4. B. SPATHACEA, *Ker, Gen. Irid.* 30.—Moræa spathacea, *Thunb. Diss. Moræa,* No. 11, tab. 1. fig. 1.—Marica spathacea, *Ker, Bot. Reg.* sub t. 229.—Bobartia indica, *Linn. Sp. Plant.* 78 (patria falsa).—Sisyrinchium spathaceum, *Pers. Syn.* i. 50.—Aristea spathacea, *Spreng. Syst. Veg.* i. 158.—Xyris altissima, *Lodd. Bot. Cab.* t. 1900 (patria falsa).—Bobartia juncea, *Salisb. in Trans. Hort. Soc.* i. 313. *C. B. Spei.*

30. TAPEINIA, *Juss.*

Juss. Gen. 59.

Perianthium regulare infundibulare, tubo supra ovarium nullo, segmentis subconformibus oblongo-lanceolatis flore expanso falcatis. *Stamina* 3 ad basin segmentorum æquilateraliter inserta, filamentis basi connatis, supra medium liberis subulatis, antheris lanceolatis profunde sagittatis. *Ovarium* oblongum triloculare, ovulis in loculo plurimis; *stylus* filiformis, ramis tribus subulatis falcatis integris. *Capsula* globosa coriacea loculicide trivalvis, seminibus plurimis turgidis. *Herba perennis perpusilla glabra dense cæspitosa, foliis distichis linearibus, scapis brevissimis, floribus solitariis terminalibus, spathæ valvis oppositis duabus lanceolato-navicularibus firmis.*

1. T. MAGELLANICA, *Ker, Gen. Irid.* 9.—Ixia magellanica, *Lam. Ill.* i. 109.—Moræa magellanica, *Willd. Sp. Plant.* i. 241.—Witsenia magellanica, *Pers. Syn.* i. 42.—Ixia pumila, *Forst. Comm. Gott.* ix. 20, t. 8.—Witsenia pumila, *Vahl, Enum.* ii. 48.—Sisyrinchium pumilum, *Hook. fil. Fl. Ant.* t. 129.—Echthronema pumilum, *Herb. in Bot. Reg.* 1843, *Misc.* 85.—Galaxia obscura, *Cav. Diss.* t. 189. fig. 4. Sisyrinchium frigidum, *Pöpp. Fragm.* 1. *Chili et Patagonia.*

31. SISYRINCHIUM, *Linn.*

Linn. Gen. No. 1017; *Klatt in Linnæa,* xxxi. 63, 371, excl. sp. —Bermudiana (*Tourn.*), *Adans. Fam.* 60.—Souza, *Vellozo, Fl. Flum.* vii. t. 1–3.—Marica, *Ker, Gen. Irid.* 16, ex parte.—Syorhynchium, *Hoffmann, Nach.* ii. 216.—Hydastylus, *Salisb. in Trans. Hort. Soc.* i. 310.—Echthronema, Eriphlema, *et* Glumosia, *Herbert in Bot. Reg.* 1843, *Misc.* 85.

Perianthium regulare infundibulare vel hypocrateriforme, tubo supra ovarium nullo, segmentis conformibus oblongis vel lanceolatis acutis vel obtusis mucronatis e basi patulis vel basi diu in cupulam conniventibus. *Stamina* 3 ad basin segmentorum æquilateraliter inserta, filamentis basi vel prorsus coalitis, antheris oblongis basifixis. *Ovarium* triloculare, ovulis in loculo crebris; *stylus* filiformis, ramis stigmatosis tribus subulatis falcatis integris, antheris alternis. *Capsula* parva oblonga vel subglobosa membranacea loculicide trivalvis, seminibus crebris minutis triquetris, testa brunnea, albumine corneo. *Herbæ annuæ vel perennes haud bulbiferæ, radicibus fibrosis, foliis siccis anguste linearibus vel teretibus, caulibus nudis vel parce foliatis ancipitibus vel teretibus, spathis multifloris sæpe solitariis vel paucis pedunculatis, valvis lanceolato-navicularibus, exterioribus* *viridibus, interioribus membranaceis, floribus fugitivis successivis luteis vel cæruleis vel rubellis, pedicellis demum cum spatha subæquilongis.*

Sectio I. ANDROSOLEN, *Klatt* (*vix Lemaire**). *Caules nudi teretes. Spathæ solitariæ vel plures terminales segregatæ pedunculatæ.*

1. S. NUNO, *Bertero; Colla in Mem. Taur.* xxxix. 17, t. 54. *Chili.*

Var. S. LEUCANTHUM, *Colla, loc. cit.*—S. depauperatum, *Philippi in Linnæa,* xxix. 61.—S. Berteroanum, *Phil. in Linnæa,* xxix. 58. *Chili.*

2. S. SETACEUM, *Klatt in Linnæa,* xxxi. 85; *Fl. Bras.* iii. 540, tab. 71. fig. 1. *Monte Video.*

3. S. GRANDIFLORUM, *Douglas in Bot. Reg.* t. 1364; *Bot. Mag.* t. 3599; *Sweet. Brit. Flow. Gard.* ser. ii. t. 388, *non Cav.*—S. Douglasii, *Dietr. Synops.* i. 150; *Lemaire in Flore des Serres,* t. 146.—Eriphlema grandiflorum, *Herb. in Bot. Reg.* 1843, *Misc.* 85. *Montes Scopulosi, Columbia britannica, California.*

4. S. TRINERVE, *Baker in Trimen, Journ.* 1876, 267. *Andes Boliviæ.*

5. S. JUNCEUM, *E. Meyer in Rel. Haenk.* i. 118.—S. roseum, *Philippi, in Linnæa,* xxix. 59. *Chili, Peru, Bolivia.*

Var. S. GRACILE, *Philippi in Linnæa,* xxix. 58. *Chili.*

Var. S. SCIRPIFORME, *Pöppig, Frag.* 22.—S. roseum, *Herb. in Bot. Reg.* 1843, *Misc.* 84.—S. scirpeum, *Philippi in Linnæa,* xxix. 59.—S. floribundum, *Philippi in Linnæa,* xxix. 59.—S. junceum, *Knowles & Westcott, Floral Cab.* iii. 17, t. 95. *Chili.*

Var. S. COLCHAGUENSE, *Philippi in Linnæa,* xxxiii. 253. *Chili.*

Var. S. ASPERULUM, *Philippi in Linnæa,* xxxiii. 252. *Chili.*

6. S. PHILIPPII, *Klatt in Linnæa,* xxxi. 89.—S. scabrum, *Philippi in Linnæa,* xxix. 58, *non Cham. & Schlecht. Andes Chilenses.*

7. S. FILIFOLIUM, *Gaudich. Voy. Freyc.* 133; *Hook. fil. Fl. Ant.* ii. 352, tab. 126.—S. Gaudichaudii, *Dietr. Sp. Plant.* ii. 505. *Insulæ Falkland, Fuegia.*

Sectio II. SISYRINGIUM, *Klatt. Caules ancipites nudi vel foliati. Spathæ solitariæ vel plures terminales segregatæ pedunculatæ.*

* *Perianthium cæruleum.*

8. S. SECUNDIFLORUM, *Klatt in Linnæa,* xxxi. 91; *Fl. Bras.* iii. 541. t. 71. fig. 2. *Brasilia.*

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* *Androsolen,* Lemaire=*Sisyrinchium,* Herbert, stirps filamentis prorsus connatis. *Sisyringium,* Lemaire, *Hydastylus,* Salisb., *Echthronema, Eriphlema* et *Glumosia,* Herb., sunt stirpes filamentis basi solum connatis.

9. S. AVENACEUM, *Klatt in Linnæa*, xxxi. 373. *Brasilia.*

10. S. SCABRUM, *Cham. & Schlecht. in Linnæa*, vi. 57.—S. multicaule, *Schauer in Linnæa*, xix. 704.—S. Berteroi, *Steud. in Lechler, Pl. Chil.* No. 290.—S. Lechleri, *Steud. in Lechler, Pl. Chil.* No. 288. *America tropicalis.*

11. S. CHILENSE, *Hook. in Bot. Mag.* t. 2786. *Chili, Monte Video, Brasilia meridionalis.*

12. S. BERMUDIANUM, *Linn. Sp. Plant.* 1353; *Cav. Diss.* t. 192. fig. 1; *Red. Lil.* t. 149.—Marica Bermudiana, *Ker, Gen. Irid.* 21.—S. Nuttalii, *Sweet, Brit. Flow. Gard.* edit. 2, 498.—S. excisum, *Godr. Fl. Juv.* 39? *America borealis, Bermuda, Hibernia, Mauritius, et Australia* (*inquilinum*).

Var. 1. S. IRIDIOIDES, *Curt. in Bot. Mag.* t. 94; *Dill. Elth.* 48, t. 41. fig. 48. *Bermuda.*

Var. 2. S. GRAMINEUM, *Curt. in Bot. Mag.* t. 464; *Red. Lil.* t. 282. *America borealis.*

Var. 3. S. GENICULATUM, *Herb. in Bot. Reg.* 1843, *Misc.* 84.—S. minus, *Engel & A. Gray, Pl. Lindh.* 55. *Texas.*

Var. 4. S. ANCEPS, *Cav. Diss.* vi. 345, t. 190. fig. 2; *Lodd. Bot. Cab.* t. 1220; *Eng. Bot.* edit. 3, t. 1491.—Marica anceps, *Ker, Gen. Irid.* 22; *Dill. Elth.* 49, t. 41. fig. 49. *America borealis, Hibernia.*

Var. 5. S. MUCRONATUM, *Mich. Fl. Amer. Bor.* ii. 33.—Marica mucronata, *Ker, Gen. Irid.* 22. *America borealis.*

** *Perianthium rubrum.*

13. S. MINUTIFLORUM, *Klatt in Linnæa*, xxxi. 71. *Monte Video.*

*** *Perianthium flavum.*

† *Acaules.*

14. S. PUSILLUM, *H. B. K. Nov. Gen.* i. 323.—Marica pusilla, *Ker, Gen. Irid.* 24. *Andes Columbiæ.*

15. S. BOGOTENSE, *H. B. K. Nov. Gen.* i. 323.—Marica bogotensis, *Ker, Gen. Irid.* 23. *Andes, Brasilia.*

16. S. JAMESONI, *Baker in Trimen, Journ.* 1876, 269. *Andes Columbiæ et Boliviæ.*

17. S. UNISPATHACEUM, *Klatt in Linnæa*, xxxiv. 737. *Andes Boliviæ.*

18. S. PATAGONICUM, *Philippi, MS.* *Patagonia.*

19. S. CALIFORNICUM, *Dryand. in Hort. Kew.* edit. 2, iv. 135.—Marica californica, *Ker in Bot. Mag.* t. 983.—Hydastylus californicus, *Salisb. in Trans. Hort. Soc.* i. 310.—Echthronema californica, *Herbert in Bot. Reg.* 1843, *Misc.* 84.—Sisyrinchium lineatum, *Torrey in Bot. Whipple*, 143.—S. flavidum, *Kellogg in Proc. Calif. Acad.* ii. 50, t. 3. *California.*

20. S. ACRE, *H. Mann in Proc. Amer. Acad.* vii. 206. *Insulæ Sandivicences.*

21. S. TINCTORIUM, *H. B. K. Nov. Gen.* i. 324.—Marica tinctoria, *Ker, Gen. Irid.* 23.—S. tingens, *Steud. Nomen. Bot.* edit. ii. 596.—S. rigidum, *Lehm. in Otto, Neue deutsche Gartenzeit.* vi. 415. *Andes.*

†† *Caulescentes.*

22. S. MICRANTHUM, *Cav. Diss.* vi. 144, t. 191. fig. 2; *Ker in Bot. Mag.* t. 2116.—Marica micrantha, *Ker, Gen. Irid.* 22.—S. micranthemum, *Pers. Syn.* i. 50. *America tropicalis, Australia orientalis* (*inquilinum*).

23. S. GRACILE, *Klotzsch, MS. Brasilia.*

24. S. CONVOLUTUM, *Nocca, Pl. Select.* i. t. 1; *Red. Lil.* t. 47; *Willd. Hort. Berol.* t. 91.—Echthronema convoluta, *Herb. in Bot. Reg.* 1843, *Misc.* 84.—Marica acorifolia, *Ker, Gen. Irid.* 24, excl. syn. *America tropicalis.*

25. S. PEARCEI, *Philippi in Linnæa*, xxxiii. 251. *Chili.*

26. S. IRIDIFOLIUM, *H. B. K. Nov. Gen.* i. 324; *Lodd. Bot. Cab.* t. 1979.—Marica iridifolia, *Ker in Bot. Reg.* t. 646.—S. laxum, *Otto in Bot. Mag.* t. 2312. *America tropicalis, Chili.*

27. S. TENUIFOLIUM, *Willd. Hort. Berol.* t. 92; *Red. Lil.* t. 275; *Bot. Mag.* t. 2117 et 2313.—Marica tenuifolia, *Ker, Gen. Irid.* 23.—Echthronema tenuifolia, *Herb. in Bot. Reg.* 1843, *Misc.* 84. *Mexico.*

28. S. MANDONI, *Baker in Trimen, Journ.* 1876, 269. *Andes Boliviæ et Columbiæ.*

29. S. GRAMINIFOLIUM, *Lindl. in Bot. Reg.* t. 1067.—Echthronema graminifolium, *Herb. in Bot. Reg.* 1843, *Misc.* 85.—S. majale, *Link, Klotzsch, & Otto. Ic.* t. 10. *Chili.*

Var. 1. S. MACULATUM, *Hook. in Bot. Mag.* t. 3197.—Echthronema maculata, *Herb. in Bot. Reg.* 1843, *Misc.* 85. *Chili.*

Var. 2. S. ASCENDENS, *Pöppig, Fragm.* 4.—S. graminifolium, var. pumilum, *Lindl. in Bot. Reg.* t. 1915.—S. dasycarpum, *Philippi, MS. Chili.*

30. S. HARTWEGII, *Baker*. *Mexico.*

31. S. PACHYRHIZUM, *Baker in Trimen, Journ.* 1876, 269.—S. Sellowii, *Klotzsch, MS.*, non S. Sellowanum, *Klatt. Brasilia meridionalis.*

32. S. RESTIOIDES, *Spreng. Syst.* i. 167. *Brasilia meridionalis, Monte Video.*

33. S. VAGINATUM, *Spreng. Syst.* i. 166.—S. sulcatum, *Gillies in Hook. Ic.* t. 218. *Brasilia meridionalis, Monte Video.*

34. S. INCURVATUM, *Gard. in Hook. Ic.* t. 513.—S. brevifolium, *Klotzsch, MS. Brasilia.*

35. S. GLAZIOVII, *Baker in Trimen, Journ.* 1876, 278.—Souza Comes, *Velloz, Fl. Flum.* vii. 2?—Sisyrinchium Comes, *Steud. Nomenc.* edit. ii. 595? *Brasilia meridionalis.*

36. S. ALATUM, *Hook. Ic.* t. 219.—Souza Marchio, *Velloz, Fl. Flum.* vii. t. 1.—Sisyrinchium Marchio, *Steud. Nomenc.* edit. ii. 596. *America tropicalis.*

Var. PAUCIFOLIUM, *Baker. America tropicalis.*

37. S. WEIRII, *Baker in Trimen, Journ.* 1876, 268. *Brasilia meridionalis.*

Sectio III. CEPHALANTHUM, *Baker. Caules nudi. Spathæ plures sessiles in caput unicum congestæ.*

* *Caulis teres.*

38. S. LUZULA, *Klotzsch; Klatt in Linnæa*, xxxi. 89, 376. *Brasilia meridionalis.*

39. S. LATERALE, *Baker in Trimen, Journ.* 1876, 269. *Andes Boliviæ.*

40. S. FASCICULATUM, *Klatt in Linnæa*, xxxi. 97. *Monte Video.*

** *Caulis anceps.*

41. S. SELLOWIANUM, *Klatt in Linnæa*, xxxi. 375; *Fl. Bras.* iii. 359, tab. 70. fig. 2. *Monte Video.*

42. S. MARGINATUM, *Klatt in Linnæa*, xxxi. 83. *Brasilia meridionalis.*

43. S. PALMIFOLIUM, *Linn. Mant.* 122, excl. syn.—Glumosia palmifolia, *Herb. in Bot. Reg.* 1843, *Misc.* 85.—Marica palmifolia, *Ker, Gen. Irid.* 20.—Moræa palmifoila, *Thunb. Diss.* No. 6.—S. racemo-

sum, *Pers. Syn.* i. 49.—Moræa alata, *Vahl, Enum.* i. 154.—S. macrocephalum, *Grah. in Edinb. New Phil. Journ.* 1833, 176.—S. altissimum, *Tenore, Atti della terz. riun.* 504.—S. elatum, *Seubert, MS. Brasilia meridionalis, Monte Video.*

Var. S. CONGESTUM, *Klatt in Linnæa,* xxxi. 98. *Brasilia meridionalis.*

Sectio IV. SPATHIRACHIS, *Klatt,* ex parte. *Caules foliati. Spathæ plures segregatæ spicatæ, laterales sessiles.*

44. S. MONOSTACHYUM, *Baker in Trimen, Journ.* 1876, 268. *Monte Video.*

45. S. SESSILIFLORUM, *Pöppig, Fragm.* 2.—S. Huismo, *Dombey, MS. Chili.*

46. S. CUSPIDATUM, *Pöppig, Fragm.* 3.—S. adenostemon, *Philippi in Linnæa,* xxix. 63.—S. flexuosum, *Lindl. Bot. Reg.* sub t. 1067, *non Spreng.*—S. arenarium, *Pöppig, Fragm.* 3. *Andes Boliviæ, Mendozæ, et Chilenses.*

47. S. STRIATUM, *Smith, Icon. Pict.* t. 9; *Red. Lil.* t. 66; *Kerner, Hort.* t. 23.—Marica striata, *Ker in Bot. Mag.* t. 701.—S. spicatum, *Cav. Diss.* t. 104.—Moræa sertata, *Jacq. Hort. Schoen.* t. 11.—S. lutescens, *Lodd. Bot. Cab.* t. 1870.—S. nigricans, *C. Gay, Fl. Chil.* vi. 20. *Chili, Mendoza.*

48. S. NERVOSUM, *Philippi in Linnæa,* xxxiii. 251. *Chili.*

32. SOLENOMELUS, *Miers.*

Miers in Trans. Linn. Soc. xix. 95, t. 8.—Symphyostemon, *Miers in Trans. Linn. Soc.* xix. 97.—Cruckshankia, *Miers, Travels,* ii. 259, *non Hook.*—Psithyrisma, *Herb. in Bot. Reg.* 1843, *Misc.* 84.—Lechlera, *Griseb. in Lechl. Pl. Chil. Exsic.* no. 2966.—Susarium, *Philippi in Linnæa,* xxxiii. 248.—Chamælum, *Philippi in Linnæa,* xxxiii. 250.

Perianthium regulare infundibulare, tubo supra ovarium distincte producto filiformi vel infundibulari recto vel curvato, segmentis conformibus oblongis vel lanceolatis flore expanso falcatis. *Stamina* 3 ad faucem tubi æquilateraliter inserta, filamentis in tubum prorsus connatis, antheris parvis oblongis basifixis. *Ovarium* triloculare, ovulis in loculo pluribus; *stylus* filiformis, ramis tribus brevibus subulatis falcatis integris. *Capsula* oblonga membranacea loculicide trivalvis, seminibus in loculo copiosis minutis triquetris, testa membranacea brunnea. *Herbæ perennes Magellanicæ et Andinæ habitu* Sisyrinchii, *radicibus fibrosis cæspitosis, foliis anguste linearibus vel teretibus, spathis multifloris sæpissimæ solitariis terminalibus, valvis exterioribus lanceolato-navicularibus viridibus, interioribus membranaceis, floribus fugitivis successivis cæruleis luteis vel albidis, pedicellis demum ac spatha æquilongis.*

Subgenus I. EUSOLENOMELUS. *Tubus perianthii gracilis curvatus.*

1. S. CHILENSIS, *Miers,* loc. cit.—Cruckshankia graminea, *Miers, Travels,* ii. 529.—Sisyrinchium pedunculatum, *Gillies in Bot. Mag.* t. 2965.—S. longistylum, *Lemaire in Flore des Serres,* t. 255.—Orthrosanthus chilensis, *Klotzsch, MS. Chili.*

Var. S. PUNCTATUS, *Miers in Trans. Linn. Soc.* xix. 96. *Chili.*

Subgenus II. LECHLERA (*Griseb.*). *Tubus perianthii rectus gracilis.*—Chamælum et Susarium, *ex parte, Philippi.*

2. S. ACAULIS, *Baker.*—Sisyrinchium acaule, *Klatt in Linnæa,* xxxiv. 736. *Andes Boliviæ.*

3. S. CHAMÆLUM, *Baker.*—Chæmælum luteum, *Philippi in Linnæa,* xxxiii. 250. *Andes Chilenses.*

4. S. NIGRICANS, *Baker.*—Susarium nigricans, *Philippi in Linnæa,* xxxiii. 249. *Chili.*

5. S. LECHLERI, *Baker.*—Lechlera Sisyrinchium, *Griseb. in Lechl. Pl. Chil. Exsic.* no. 2966.—Sisyrinchium Segethi, *Philippi in Linnæa,* xxxiii. 249. *Andes Chilenses.*

Subgenus III. SYMPHYOSTEMON (*Miers*). *Tubus perianthii rectus infundibularis dimidio inferiore cylindricus.*—Psithyrisma, *Herbert.*

6. S. ANDINUS, *Baker.*—Sisyrinchium andinum, *Phil. in Linnæa,* xxix. 62.—Susarium andinum, *Phil. in Linnæa,* xxviii. 250. *Andes Chilenses.*

7. S. BIFLORUS, *Baker.*—Gladiolus biflorus, *Thunb. Diss. Glad.* No. 5. —Sisyrnchium narcissoides, *Cav. Diss.* vi. t. 191. fig. 3.—Galaxia narcissoides, *Willd. Sp. Plant.* iii. 583.—Sisyrinchium odoratissimum, *Lindl. Bot. Reg.* t. 1283.—Symphyostemon narcissoides, *Miers in Trans. Linn. Soc.* xix. 97.—Psithyrisma narcissoides et flexuosum, *Herb. in Bot. Reg.* 1843, *Misc.* 84. *Chili et Patagonia.*

33. XIPHION, *Tournef.*

Tournef. Inst. i. 362, t. 189; *Miller, Gard. Dict.* edit. vi.—Xiphion § Euxiphion, *Parl. Fl. Ital.* iii. 304.—Chamoletta, *Adans. Famil.* 60.—Iris, *Linn. ex parte.*—Diaphane (ex parte) *et* Thelysia, *Salisb. in Trans. Hort. Soc.* i. 303.—Juno, *Tratt. Ausw.* i. 135.—Thelysia, *Parl. Fl. Ital.* iii. 316.—Costia, *Willk. in Bot. Zeit.* 1860, 131.—Coresanthe, *Alefeld in Bot. Zeit.* 1863, 298.

Perianthium regulare erectum, tubo supra ovarium subnullo vel elongato, limbi segmentis tribus exterioribus obovato-spathulatis flore expanso falcatis ungue imberbi raro parce barbato, tribus interioribus oblanceolatis erectis vel parvis inter ungues exteriorum patulis vel in § *Micropogon* prorsus obsoletis. *Stamina* 3 ad faucem tubi æquilateraliter inserta, stylis opposita, filamentis liberis erectis, antheris ligulatis basifixis filamentis subæquilongis. *Ovarium* cylindricum triloculare, ovulis in loculo crebris horizontalibus; *stylus* cum tubo concretus, ramis tribus magnis quadratis petaloideis apice cristis duabus magnis deltoideis præditis. *Capsula* magna oblonga chartacea loculicide trivalvis, seminibus globosis magnitudine pisi, testa crassa brunnea, albumine corneo. *Herbæ bulbosæ regionum Mediterraneæ et Orientis, bulbi tunicis brunneis membranaceis vel fibroso-reticulatis, foliis ensiformibus linearibus vel subulatis, caulibus productis vel nullis, spathæ sæpissime uniflore valvis magnis lanceolatis, floribus speciosis lilacino-purpureis luteis vel albidis.*

Subgenus I. EUXIPHION. *Perianthii segmenta exteriora imberbia, interiora magna oblanceolata ascendentia.*

1. X. VULGARE, *Miller, Gard. Dict.* edit. 6.—X. angustifolium, *Tournef. Instit.* 364.—Iris Xiphium, *Linn. Sp. Plant.* 58, *ex parte*; *Bot. Mag.* t. 686; *Red. Lil.* t. 337.—Iris variabilis, *Jacq. Coll.* ii. 231. *Hispania, Gallia australis.*

Var. X. LUSITANICUM, *Alefeld in Bot. Zeit.* 1863, 297.—Iris lusitanica, *Ker in Bot. Mag. t.* 679.—I. juncea, *Brotero, Fl. Lusit.* i. 51, *non Desf. Lusitania.*

Var. X. SORDIDUM, *Salisb. in Trans. Hort. Soc.* i. 303. *Lusitania.*

Var. IRIS SEROTINA, *Willk. Prodr. Fl. Hisp.* i. 141. *Hispania.*

Var. IRIS SPECTABILIS, *Spach, Ann. Sc. Nat.* ser. iii. vol. v. 93, *est verisimiliter hybridum hortense inter vulgarem et angustifolium.*

2. X. LATIFOLIUM, *Miller, Gard. Dict.* edit. vi.—Iris xiphioides, *Ehrh.*

Beitr. vii. 140; *Bot. Mag.* t. 687; *Red. Lil.* t. 212.—I. Xiphium, *Linn. ex parte.*—I. Xiphium, *Jacq. Coll.* ii. 326.—I. pyrenaica, *Bubani, Sched. Crit.* 3. *Gallia australis, Hispania borealis.*

3. X. HISTRIO, *Hook. fil. Bot. Mag.* t. 6033.—Iris Histrio, *Reich. fil. in Bot. Zeit.* 1872, 488.—I. Libani, *Reuter, MS. Palæstina.*

4. X. FONTANESII, *Baker in Gard. Chron.* 1876, 559.—I. Fontanesii, *Godr. Fl. France,* iii. 245.—I. Xiphium, *Desf. Fl. Atlant.* i. 37, *non Linn. Algeria.*

5. X. FILIFOLIUM, *Klatt in Linnæa,* xxxiv. 571; *Hook. fil. Bot. Mag.* t. 5928.—Iris filifolia, *Boiss. Voy. Esp.* 602, t. 170. *Hispania australis.*

Var. LATIFOLIUM, *Baker.*—X. tingitanum, *Hook. fil. Bot. Mag.* t. 5981. *non Baker. Mauritania.*

6. X. JUNCEUM, *Klatt in Linnæa,* xxxiv. 570.—Iris juncea, *Desf. Fl. Atlant.* i. 39, t. 4; *Bot. Mag.* t. 5890. *non Brotero.*—I. imberbis, *Poir. Voy. Barb.* ii. 85.—I. mauritanica (*Clusius, Cur. Post.* 24), *Ker in Bot. Mag. sub* t. 986.—Diaphane stylosa, *Salisb. in Trans. Hort. Soc.* i. 305. *Algeria, Mauritania, Sicilia, Italia.*

7. X. TINGITANUM, *Baker in Seem. Journ.* 1871, 13.—Iris tingitana, *Boiss. & Reut. Pugill.* 118. *Mauritania.*

8. X. RETICULATUM, *Klatt in Linnæa,* xxxiv. 572.—Iris reticulata, *M. Bieb. Fl. Taur. Cauc.* 34, t. 1; *Cent. Pl. Ross.* t. 11; *Sweet, Brit. Flow. Gard.* ser. ii. t. 189; *Lodd. Bot. Cab.* t. 1829; *Regel, Gartenf.* t. 452; *Bot. Mag.* t. 5577.—Neubeckia reticulata, *Alefeld in Bot. Zeit.* 1863, 297. *Oriens, Caucasus.*

Var. KRELAGEI, *Regel, Animad.* 15. *Caucasus.*

Subgenus II. JUNO. *Perianthii segmenta exteriora imberbia; interiora minuta inter ungues exteriorum patula.*

9. X. PLANIFOLIUM, *Miller, Gard. Dict.* edit. 6.—X. alatum, *Baker in Seem. Journ.* 1871, 108.—Iris alata, *Poir. Voy. Barb.* ii. 86; *Bot. Reg.* t. 1876.—Thelysia alata, *Parlat. Fl. Ital.* iii. 317.—Coresanthe alata, *Klatt in Linnæa,* xxxiv. 575, *ex parte.*—Iris scorpioides, *Desf. Fl. Atlant.* i. 40, t. 6; *Red. Lil.* t. 211.—Juno scorpioides, *Tratt. Ausw.* i. 145.—Costia scorpioides, *Willk. in Bot. Zeit.* 1860, 131.—Neubeckia scorpioides, *Alefeld in Bot. Zeit.* 1863, 297.—Iris transtagana, *Brotero, Fl. Lusit.* i. 52.—I. trialata, *Brotero, Phyt. Lus.* ii. 44, t. 95.—I. microptera, *Vahl, Enum.* ii. 142.—Thelysia grandiflora, *Salisb. in Trans. Hort. Soc.* i. 303. *Europa australis, Algeria.* (*De synonymis cf. Aschersen in Bot. Zeit.* 1864, 112.)

10. X. PERSICUM, *Miller, Gard. Dict.* vi.—Iris persica, *Linn. Sp. Plant.* 52; *Bot. Mag.* t. 1; *Red. Lil.* t. 189.—Juno persica, *Tratt.*

Ausw. i. 135.—Costia persica, *Willk. in Bot. Zeit.* 1860, 132.—Coresanthe persica, *Alefeld in Bot. Zeit.* 1863, 296. *Asia Minor, Persia.*

11. X. PALÆSTINUM, *Baker in Seem. Journ.* 1871, 108.—Juno palæstina, *Klatt in Bot. Zeit.* 1872, 498. *Palæstina.*

12. X. CAUCASICUM, *Baker in Seem. Journ.* 1871, 109.—Iris caucasica, *Hoffm. Comm. Soc Phys. Med. Mosc.* i. 40; *Sweet, Brit. Flow. Gard.* t. 255.—Juno caucasica, *Klatt in Bot. Zeit.* 1872, 498.—Thelysia caucasica, *Parl. Fl. Ital.* iii. 317.—Costia caucasica, *Willk. in Bot. Zeit.* 1860, 132.—Neubeckia caucasica, *Alefeld in Bot. Zeit.* 1863, 297.—Coresanthe caucasica, *Klatt in Linnæa,* xxiv. 575. *Caucasus, Persia borealis.*

13. X. AITCHISONI, *Baker in Trimen, Journ.* 1875, 108. *Punjaub.*
Var. CHRYSANTHUM, *Baker. Punjaub.*

14. X. STOCKSII, *Baker in Gard. Chron.* 1876, 723. *Afghanistan, Beloochistan.*

15. X. AUCHERI, *Baker in Seem. Journ.* 1878, 110.—Juno Aucheri, *Klatt in Bot. Zeit.* 1872, 498.—Iris fumosa, *Boiss. & Hauss. Exsic. Syria.*

Subgenus III. MICROPOGON, *Baker in Trimen, Journ.* 1876, 265. *Perianthii segmenta exteriora unguibus parce barbatis; interiora prorsus obsoleta.*

16. X. DANFORDIÆ, *Baker in Trimen, Journ.* 1876, 265. *Taurus Ciliciæ.*

34. SPHENOSTIGMA, *Baker.*

Alophiæ sp., *Klatt.*

Perianthium regulare erectum, tubo supra ovarium nullo, segmentis paulo difformibus obovato-spathulatis cuspidatis, interioribus distincte minoribus haud convolutis. *Stamina* 3 epigyna æquilateralia erecta, filamentis brevissimis liberis, antheris ligulatis erectis. *Ovarium* clavatum triloculare, ovulis in loculo crebris; *stylus* filiformis antheras superans, stigmatibus tribus parvis integris cuneatis. *Capsula* membranacea operculata clavata. *Semina* matura non vidi. *Herba bulbosa brasiliensis, foliis paucis linearibus subpetiolatis plicatis, caulibus teretibus foliis, spathis singulis terminalibus cylindricis paucifloris, valvis lanceolatis striatis viridibus acutis, floribus violaceis successivis fugitivis, pedicellis ac spatha æquilongis.*

1. S. SELLOWIANUM, *Baker.*—Alophia Sellowiana, *Klatt in Linnæa,* xxxi. 557; *Flor. Bras.* iii. 516, tab. 65. fig. 2. *Brasilia meridionalis.*

35. Cipura, *Aublet.*

Aublet, Guian. 38, t. 13; *Klatt in Linnæa*, xxxi. 551.—Marica, *Schreb. Gen.* no. 81; *Ker, Gen. Irid.* 19, *ex parte, non Herbert.*

Perianthium regulare campanulatum, tubo supra ovarium brevissimo, segmentis dissimilibus, exterioribus majoribus obovato-spathulatis flore expanso patulis, interioribus minoribus obovatis erectis basi cuneatis diu conniventibus dorso concavis haud convolutis. *Stamina* 3 ad faucem tubi æquilateraliter inserta, antheris ligulatis erectis, filamento libero subulato æquilongis. *Ovarium* clavatum triloculare, ovulis in loculo crebris; *stylus* erectus filiformis, ramis tribus oblongis integris petaloideis. *Capsula* clavata, membranacea, ex apice loculicide trivalvis, seminibus crebris obovoideis vel triquetris, testa atra membranacea, albumine corneo. *Herbæ bulbosæ paludosæ americanæ tropicales, bulbi tunicis brunneis membranaceis, foliis linearibus plicatis subpetiolatis vel teretibus, caule gracili tereti, spathis pluribus cylindricis multifloris in umbellam unicam terminalem folio unico bracteatam congestis, valvis inæqualibus lanceolatis, pedicellis spathæ æquilongis, floribus albidis vel pallide cæruleis successivis fugitivis.*

1. C. paludosa, *Aublet, loc. cit.*; *Klatt in Fl. Bras.* iii. 514, t. 64. fig. 1. —Marica paludosa, *Willd. Sp. Plant.* i. 246; *Ker in Bot. Mag.* t. 646.—M. Cipura, *Gmel. Syst. Veg.* 118.—Cipura humilis *et* graminea, *H. B. K. Nov. Gen.* i. 320. *America tropicalis tota.*

2. C. cubensis, *Sauv. Fl. Cuba*, 166. *Cuba.*

36. Alophia, *Herbert.*

Herbert in Bot. Mag. sub t. 3779; *Klatt in Linnæa*, xxxi. 556, excl. sp.—Cypellæ sp., *Graham.*

Perianthium regulare erectum, tubo supra ovarium subnullo, segmentis dissimilibus, exterioribus obovatis, interioribus minoribus navicularibus convolutis. *Stamina* 3 æqualiteralia, filamentis brevissimis, antheris panduriformibus connectivo lato. *Ovarium* clavatum triloculare, ovulis in loculo crebris; *stylus* triqueter, superne incrassatus, stigmatibus bifidis ramis subulatis recurvatis. *Capsula* oblonga membranacea operculata. *Herbæ bulbosæ texanæ, caulibus teretibus parce foliatis, foliis lineribus plicatis, spathis bifloris valvis inæqualibus acutis viridibus, floribus successivis fugitivis violaceis unguibus luteis maculatis.*

1. A. Drummondiana, *Herbert, loc. cit.*—Cypella Drummondii, *Grah. in Edinb. New Phil. Journ.* xx. 190. *Texas.*

Species mihi imperfecte cognitæ.

2. A. linearis, *Klatt in Linnæa,* xxxi. 558.—Moræa linearis, *H. B. K. Nov. Gen.* i. 321. *Columbia, Guiana, et fide Klatt, Brasilia.*

3. A. geniculata, *Klatt in Mart. Fl. Bras.* iii. 517. *Brasilia centralis.*

37. Lansbergia, *De Vriese.*

De Vriese, Ind. Sem. Hort. Lug. Bat. 1846, 2; *Klatt in Linnæa,* xxxi. 547.—Trimezia, *Salisb. in Trans. Hort. Soc.* i. 308.—Xanthocromyon, *Karsten in Bot. Zeit.* 1847, 694.—Poarchon, *Mart. Syst. Mat. Med. Bras.* 77.—Remaclea, *Morren in Belg. Hort.* iii. 3, t. 1.—Iridis, Cipuræ, Ferrariæ sp. auct. vet.

Perianthium regulare erectum, tubo supra ovarium nullo, segmentis valde difformibus, exterioribus obovatis ascendentibus, interioribus multo minoribus panduriformibus basi cuneatis convolutis diu conniventibus. *Stamina* 3 epigyna æquilateralia, filamentis liberis subulatis antheris æquilongis, antheris ligulatis ad styli ramos adglutinatis. *Ovarium* clavatum triloculare apice liberum, ovulis in loculo crebris; *stylus* cylindricus, apice incrassatus, ramis tribus cylindricis erecto-patentibus apice brevissime cristatis. *Capsula* oblonga membranacea vel coriacea operculata, ex apice loculicide trivalvis, seminibus in loculo crebris triquetris vel globosis, testa nigra obscura membranacea, albumine corneo. *Herbæ americanæ tropicales cormis duris præditis, foliis teretibus vel linearibus haud plicatis, caulibus teretibus nudis vel foliatis, spathis singulis vel paucis terminalibus cylindricis multifloris, valvis viridibus striatis acutis inæqualibus, floribus fugitivis successivis flavis, violaceis vel miniatis, pedicellis spathæ subæquilongis.*

Acaules.

1. L. juncifolia, *Klatt in Linnæa,* xxxi. 549. *Brasilia centralis.*

2. L. violacea, *Klatt in Mart. Fl. Bras.* iii. 526. *Brasilia centralis.*

3. L. cathartica, *Klatt in Linnæa,* xxxi. 549.—Ferraria cathartica, *Mart. Reise,* ii. 547. *Brasilia centralis.*

4. L. monticola, *Klatt in Mart. Fl. Bras.* iii. 526. *Brasilia centralis.*

5. L. purgans, *Klatt in Mart. Fl. Bras.* iii. 527.—Ferrraria purgans, *Mart. Reise,* ii. 547. *Brasilia centralis.*

Caulescentes.

6. L. MARTINICENSIS, *Baker.*—Iris martinicensis, *Linn. Sp.* 58; *Bot. Mag.* t. 416; *Red. Lil.* t. 172; *Descourt. Ant.* t. 252; *Jacq. Hist. Stirp. Am.* t. 10.—Cipura martinicensis, *H. B. K. Nov. Gen.* i. 320; *Ref. Bot.* 310.—Marica martinicensis, *Ker in König & Sims, Ann.* i. 225.—Vieusseuxia martinicensis, *DC. in Ann. Mus.* ii. 138.—Trimezia lurida, *Salisb. in Trans. Hort. Soc.* i. 280.—Lansbergia caracasana, *De Vriese, Ind. Sem. Lug. Bat.* 1846, 2; *Klatt in Fl. Bras.* iii. 527, tab. 57. fig. 2.—Xanthocromyon Herberti, *Karsten in Bot. Zeit.* 1847, 694.—Sisyrinchium galaxioides, *Gomes in Act. Acad. Uliss.* iii.; *Mem. Corr.* 99.—Poarchon fluminensis, *Allem. in Trans. Soc. Vellos.* No. 24, *cum icone.*—Sisyrinchium fluminense, *Vellos. Fl. Flum.* ix. t. 68.—Remaclea funebris, *Morren in Belg. Hort.* iii. 3, t. 1; *Klatt in Mart. Fl. Bras.* iii. 528, t. 68. fig. 1. *America tropicalis.*

7. L. SPATHATA, *Klatt in Mart. Fl. Bras.* iii. 528. *Brasilia centralis.*

38. HESPEROXIPHON, *Baker.*

Cypellæ, Ferrariæ *et* Poliæ sp. auct.

Perianthium regulare erectum, tubo supra ovarium nullo, segmentis valde difformibus, exterioribus obovato-spathulatis flore expanso patulis, interioribus multo minoribus panduriformibus convolutis diu conniventibus. *Stamina* 3 epigyna æquilateralia, filamentis brevibus erectis deltoideis, antheris ligulatis basifixis styli ramis oppositis. *Ovarium* clavatum triloculare apice liberum, ovulis in loculo crebris; *stylus* filiformis, stigmatibus magnis quadratis petaloideis, apice cristis tribus deltoideis instructis, intermedia multo minore. *Capsula* clavata membranacea. *Semina* non vidi. *Herbæ bulbosæ americanæ, foliis petiolatis plicatis, caulibus teretibus simplicibus vel parce ramosis, spathis paucifloris pedunculatis valvis lanceolatis acutis, floribus speciosis fugitivis luteis, segmentorum unguibus pallidis maculatis.*

1. H. PUSILLUM, *Baker.*—Ferraria pusilla, *Link & Otto, Ic.* t. 59.—Polia pusilla, *Klatt in Linnæa,* xxxi. 545.—Herbertia pusilla, *Sweet, Brit. Flow. Gard.* edit. 2, 497. *Brasilia meridionalis.*

2. H. PERUVIANUM, *Baker.*—Cypella peruviana, *Baker in Bot. Mag.* t. 6213. *Andes peruvianæ.*

39. PHALOCALLIS, *Herbert.*

Herbert in Bot. Mag. t. 3710; *Klatt in Linnæa,* xxxi. 536.—Cypellæ sp., *Lindl.*

Perianthium erectum, tubo supra ovarium nullo, limbi campanulati segmentis difformibus, exterioribus majoribus obovato-spathulatis flore expanso falcatis, interioribus minoribus obovato-unguiculatis convolutis. *Stamina* 3 epigyna erecta, filamentis brevissimis deltoideis liberis, antheris medio constrictis connectivo lato, superne ad styli ramos adglutinatis. *Ovarium* clavatum triloculare, ovulis in loculo crebris; *stylus* erectus deorsum filiformis, superne cyathiformis trigonus, stigmatibus cristis 2 deltoideis petaloideis transversalibus præditis, basi obscure appendiculatis. *Capsula* clavata membranacea obscure operculata indehiscens, seminibus discoideis anguste alatis. *Herba bulbosa brasiliensis, bulbi tunicis brunneis membranaceis, foliis linearibus plicatis petiolatis, caulibus parce ramosis teretibus foliatis, spathis terminalibus pedunculatis multifloris valvis lanceolatis firmis striatis, pedicellis spathæ æquilongis, floribus magnis successivis fugitivis lilacinis segmentorum unguibus luteo et rubro maculatis.*

1. P. **PLUMBEA**, *Herbert, loc. cit.*; *Flore des Serres*, t. 395 & 1466; *Klatt in Mart. Fl. Bras.* iii. 518, tab. 66. fig. 1.—Cypella plumbea, *Lindl. in Bot. Reg.* t. 24.—Tigridia cœlestis, *Otto MS. Brasilia meridionalis.*

40. CYPELLA, *Herbert.*

Herbert in Bot. Mag. sub t. 2637; *Endlich. Gen.* No. 1228.—Polia, *Tenore, Rev. Bot.* ii. 126; *Klatt in Linnæa*, xxxi., 543.—Marica, *Ker, Gen. Irid.* 19, *ex parte.*—Moreæ sp., *Lindl.*

Perianthium regulare erectum, tubo supra ovarium nullo, segmentis valde difformibus, exterioribus obovato-cuneatis flore expanso patulis, interioribus multo minoribus panduriformibus convolutis diu conniventibus. *Stamina* 3 epigyna, filamentis planis brevibus liberis, antheris erectis ligulatis basifixis. *Ovarium* clavatum triloculare apice liberum, ovulis in loculo crebris; *stylus* filiformis, ramis tribus apice turbinatis bifidis, ramulis tricuspidatis, cuspide centrali producta, lateralibus multo minoribus, exteriore patula. *Capsula* clavata membranacea operculata trivalvis, seminibus parvis triquetris, testa brunnea, albumine corneo. *Herbæ bulbosæ brasilienses et bonarienses, bulbi tunicis brunneis membranaceis, foliis paucis superpositis linearibus plicatis, caulibus teretibus fragilibus sæpissime ramosis, spathis paucifloris pedunculatis cylindricis valvis viridibus lanceolatis acutis, floribus successivis fugitivis luteis vel cæruleis.*

1. C. **HERBERTI**, *Herb. in Bot. Mag. sub* t. 2637; *Sweet, Brit. Flow.*

Gard. ser. ii. t. 33.—Tigridia Herbertiana, *Herbert in Bot. Mag.* t. 2599.—Moræa Herberti, *Lindl. in Bot. Reg.* t. 949.—Marica Herbertiana, *Ker, Gen. Irid.* 19.—Polia bonariensis, *Ten. Rev. Bot.* ii. 127. *Bonaria.*

Var. POLIA RAMOSA, *Klatt in Linnæa*, xxxi. 544. *Monte Video et Brasilia meridionalis.*

2. C. GRACILIS, *Baker.*—Polia gracilis, *Klatt in Linnæa*, xxxi. 545. *Brasilia, Monte Video.*

41. MORÆA, *Miller.*

Miller, Icon. t. 238; *Dict.* edit. vi. *ex parte*; *Linn. Gen.* No. 60, *ex parte*; *Ker, Gen. Irid.* 31, *ex parte*; *Klatt in Linnæa*, xxxiv. 557.—Iris, *Thunb. Diss. ex parte.*—Helixyra, *Salisb. in Trans. Hort. Soc.* i. 305.—Gynandriris, *Parl. Nuov. Gen.* 49; *Klatt in Linnæa*, xxxiv. 576.—Hymenostigma, *Hochst. in Flora*, 1844, 24.—Freuchenia, *Eckl. Top. Verz.* 14—Vieusseuxia, *Eckl. Top. Verz.* 11, *ex parte, non Delaroche.*

Perianthium regulare erectum, tubo supra ovarium nullo vel producto, segmentis difformibus, exterioribus oblongo- vel obovato-unguiculatis supra medium flore expanso patulis unguibus nudis vel obscure barbatis, interioribus subæquilongis angustioribus. *Stamina* 3 epigyna vel perigyna æquilateralia stigmatibus opposita, filamentis sæpissime inferne coalitis superne liberis, antheris ligulatis erectis basifixis. *Ovarium* clavatum 3-loculare, ovulis in loculo crebris; *stylus* filiformis, stigmatibus tribus planis petaloideis apice cristis 2 petaloideis præditis. *Capsula* oblongo-trigona membranacea vel coriacea loculicide trivalvis, seminibus triquetris, testa brunnea, albumine corneo. *Herbæ bulbosæ vel tuberosæ, tunicis fibrosis vel cancellatis, foliis paucis superpositis planis vel teretibus interdum pilosis, caulibus teretibus simplicibus vel ramosis, spathis paucifloris pedunculatis, valvis exterioribus firmis lanceolatis acutis, floribus sæpissime fugitivis lilacinis vel luteis.*

Subgenus I. EUMORÆA. *Perianthii tubus obsoletus. Stamina epigyna.*

* *Nanæ.*

1. M. PAPILONACEA, *Ker in Bot. Mag.* t. 750.—Iris papilionacea, *Linn. fil. Suppl.* 98; *Thunb. Diss.* No. 37, tab. 2. fig. 1; *Jacq. Coll. Suppl.* 159, tab. 3. fig. 2.—Moræa ciliata, *Herb. Drege.*—Vieusseuxia ciliata et nervosa, *Eckl. Top. Verz.* 11-12.—Moræa hirsuta, *Ker, Gen. Irid.* 43. —Iris hirsuta, *Licht. in Roem. & Schult. Syst. Veg.* i. 478. *C. B. Spei.*

2. M. FIMBRIATA, *Klatt in Linnæa*, xxxiv. 561. *C. B. Spei.*

3. M. CILIATA, *Ker in König & Sims, Ann.* i. 241; *Bot. Mag.* t. 1061. —Iris ciliata, *Linn. fil. Suppl.* 98. *C. B. Spei.*

4. M. BARBIGERA, *Salisb. in Trans. Hort. Soc.* i. 306.—M. ciliata, var., *Ker in Bot. Mag.* t. 1012.—? M. pilosa, *Wendl. Obs. Bot.* 45. *C. B. Spei.*

5. M. TRICOLOR, *Andr. Bot. Rep.* t. 83. *C. B. Spei.*

6. M. MINUTA, *Ker in König & Sims, Ann.* i. 219.—Iris minuta, *Linn. fil. Suppl.* 98. *C. B. Spei.*

7. M. POLYPHYLLA, *Baker.* *C. B. Spei.*

8. M. GALAXIOIDES, *Baker.* *Transvaal.*

** *Simplicicaules.*

9. M. LURIDA, *Ker in Bot. Reg.* t. 312. *C. B. Spei.*

10. M. ANGUSTA, *Ker in Bot. Mag.* t. 1276.—Iris angusta, *Thunb. Diss.* No. 28. *C. B. Spei.*

11. M. ZAMBESIACA, *Baker.* *Terra fluminis Zambesi.*

12. M. TEXTILIS, *Baker.* *Angola.*

13. M. WELWITSCHII, *Baker.* *Angola.*

14. M. GRACILIS, *Baker.* *Angola.*

15. M. DIVERSIFOLIA, *Baker.*—Xiphion diversifolium, *Klatt in Linnæa*, xxxiv. 572.—Vieusseuxia Schimperi *et* tridentata, *Hochst. in Schimp. Pl. Abyss.* No. 1296.—Hymenostigma Schimperi *et* tridentatum, *Hochst. in Flora*, 1844, 24–25.—Iris diversifolia, *Steud. in Schimp. Pl. Abyss.* No. 1173. *Abyssinia.*

*** *Edules.*

16. M. SETACEA, *Ker in König & Sims, Ann.* i. 240.—Iris setifolia, *Linn. fil. Suppl.* 99.—Iris setacea, *Thunb. Diss.* No. 29, tab. 1. fig. 2. —Vieusseuxia setacea, *Eckl. Top. Verz.* 13. *C. B. Spei.*

17. M. JUNCEA, *Linn. Sp.* edit. 2, 59 (*Linn. herb.* ! *an Miller* ?). *C. B. Spei.*

18. M. PLUMARIA, *Ker in König & Sims, Ann.* i. 240.—Iris plumaria, *Thunb. Diss.* No. 16.—Vieusseuxia plumaria, *Eckl. Top. Verz.* 14.—Moræa iriopetala, *Linn. Suppl.* 100.—M. vegeta, *Linn. herb.* ! *non Miller.* *C. B. Spei.*

19. M. POLYANTHOS, *Thunb. Diss.* No. 14.—Vieusseuxia graminifolia, *Eckl. Top. Verz.* 11. *C. B. Spei.*

20. M. EDULIS, *Ker in König & Sims, Ann.* i. 241; *Bot. Mag.* t. 613.

—Iris edulis, *Linn. Suppl.* 98.—I. capensis, *Burm. Prodr.* 2.—Moræa vegeta, *Jacq. Ic.* t. 224, *non Miller.*—M. fugax, *Jacq. Hort. Vind.* iii. 14, t. 20.—Iris Sisyrinchium, *Red. Lil.* t. 458, *non Linn.*—Vieusseuxia edulis, *Eckl. Top. Verz.* 14. *C. B. Spei.*

Var. M. ODORA, *Salisb. Parad. Lond.* t. 10. *C. B. Spei*

Var. M. LONGIFOLIA, *Sweet, Hort. Brit.* edit. 2, 497.—Iris longifolia, *Schneev. Ic.* t. 20; *Andr. Bot. Rep.* t. 45.—Moræa edulis, var., *Ker in Bot. Mag.* t. 1238.—Vieusseuxia longifolia, *Eckl. Top. Verz.* 14. *C. B. Spei.*

21. M. SPITHAMÆA, *Baker. Angola.*

22. M. ANDONGENSIS, *Baker. Angola.*

23. M. TRISTIS, *Ker in König & Sims, Ann.* i. 241.—Iris tristis, *Linn. fil. Suppl.* 97; *Ker in Bot. Mag.* t. 577.—Vieusseuxia tristis, *Eckl. Top. Verz.* 11.—M. sordescens, *Jacq. Ic.* t. 225; *Red. Lil.* t. 71.—M. iriopetala, var., *Willd. Sp. Plant.* i. 244; *Miller, Icones,* tab. 238. *C. B. Spei.*

24. M. GLUTINOSA, *Baker. Angola.*

25. M. POLYSTACHA, *Ker in König & Sims, Ann.* i. 240.—Iris polystachya, *Thunb. Diss.* No. 41.—Vieusseuxia polystachya, *Eckl. Exsic.* —Iris lacera, *Lam. Encyc.* iii. 304. *C. B. Spei.*

26. M. SPATHACEA, *Ker in Bot. Mag. sub* t. 1103.—Iris spathacea, *Thunb. Diss.* No. 23.—I. spathulata, *Linn. Suppl.* 99.—Moræa longispatha, *Klatt in Linnæa,* xxxiv. 360.—Dietes Huttoni, *Bot. Mag.* t. 6174. *C. B. Spei.*

27. M. GIGANTEA, *Klatt in Linnæa,* xxxv. 381. *C. B. Spei.*

**** *Candelabra.*

28. M. CANDELABRUM, *Baker. Angola.*

29. M. CRISPA, *Ker in Bot. Mag.* t. 759 & 1284.—Iris crispa, *Linn. fil. Suppl.* 98.—Vieusseuxia crispa, *Eckl. Top. Verz.* 12. *C. B. Spei.*

Var. M. UNDULATA, *Ker, Gen. Irid.* 43.—M. crispa, *Thunb. Diss.* No. 17. *C. B. Spei.*

30. M. BITUMINOSA, *Ker in König & Sims, Ann.* i. 240; *Bot. Mag.* t. 1045.—Iris bituminosa, *Linn. fil. Suppl.* 98.—Vieusseuxia bituminosa, *Eckl. Top. Verz.* 14. *C. B. Spei.*

31. M. VISCARIA, *Ker in König & Sims, Ann.* i. 240.—Iris viscaria, *Linn. fil. Suppl.* 98.—Vieusseuxia viscaria, *Eckl. Top. Verz.* 12. *C. B. Spei.*

32. M. RAMOSA, *Ker in Bot. Mag.* t. 771.—Iris ramosa, *Thunb. Diss.* No. 24.—Iris ramosissima, *Linn. fil. Suppl.* 99.—Moræa racemosa, *Herb. Drege.*—M. bulbifera, *Jacq. Hort. Schoen.* t. 197; *Bot. Mag.* t. 5785.—Freuchenia bulbifera, *Eckl. Top. Verz.* 14. *C. B. Spei.*

Subgenus II. HELIXYRA. *Perianthii tubus productus. Stamina perigyna.* Sisyrinchium, *Adans., non Linn.*—Gynandriris, *Parl.*

33. M. SISYRINCHIUM, *Ker in König & Sims, Ann.* i. 241; *Bot. Mag.* t. 1407.—Iris Sisyrinchium, *Linn. Sp. Plant.* edit. ii. 59; *Cav. Ic.* t. 193; *Sibth. & Smith, Fl. Græc.* t. 42; *Red. Lil.* t. 29.—Gynandriris Sisyrinchium, *Parl. Nuov. Gen.* 49.—Xiphion Sisyrinchium, *Baker in Seem. Journ.* 1871, 42; *Bot. Mag.* t. 6096.—Diaphane edulis, *Salisb. in Trans. Hort. Soc.* i. 304. *Regio Mediterranea, Oriens, Afghanistan.*

Var. MINOR, *Cambes. Enum. Balear.* 142.—Iris monophylla, *Boiss. & Held. Exsic.*—I. Sisyrinchium, var. monophylla, *Held. in Atti Cong. Intern. Firenz.* 234.—Gynandriris monophylla, *Klatt in Linnæa,* xxxiv. 578, *ex parte.*

Var. I. SAMARITANII, *Held. in Atti Inter. Cong. Firenz.* 234. *Ægyptus.*

Var. ÆGYPTIA.—Iris ægyptia, *Delile, Fl. Arab.* 6.

Var. M. FUGAX, *Tenore, Syll.* 46.—Iris fugax, *Tenore, Fl. Neap.* i. 15, t. 14.—M. Tenoreana, *Sweet, Brit. Flow. Gard.* t. 110.

34. M. BURCHELLII, *Baker. C. B. Spei.*

35. M. LONGIFLORA, *Ker in Bot. Mag.* t. 712.—Helixyra flava, *Salisb. in Trans. Hort. Soc.* i. 305. *C. B. Spei.*

42. VIEUSSEUXIA, *Delaroche.*

Delaroche, Diss. xxxi. t. 5; *DC. in Mém. Mus.* ii. 136, *cum icone*; *Klatt in Linnæa,* xxxiv. 620; *Eckl. Top. Verz.* 11, *ex parte.*—Moræa, *Ker, Gen. Irid.* 35, *ex parte.*—Iris, *Linn. fil. et Thunb. Diss. ex parte.*

Perianthium regulare erectum, tubo supra ovarium nullo, segmentis valde difformibus, exterioribus obovatis unguiculatis flore expanso patulis, interioribus multo minoribus longe unguiculatis lamina parva sæpissime rhomboidea tricuspidata instructis. *Stamina* 3 æquilateralia epigyna stigmatibus opposita, filamentis in tubum cylindricum prorsus connatis, antheris ligulatis erectis basifixis. *Ovarium* clavatum triloculare, ovulis in loculo crebris; *stylus* filiformis, ramis stigmatosis planis petaloideis apice cristis 2 lanceolatis petaloideis præditis. *Capsula* clavata membranacea ab apice loculicide trivalvis, seminibus parvis triquetris, testa brunnea, albumine corneo. *Herbæ bulbosæ capenses, bulbi tunicis fibrosis, foliis angustissimis superpositis duris, caulibus gracillimis teretibus simplicibus vel ramosis, spathis paucifloris* *terminalibus pedunculatis valvis firmis viridibus lanceolatis acutis, floribus successivis fugitivis.*

1. V. TRIPETALOIDES, *DC. in Ann. Mus.* ii. 138.—Moræa tripetala, *Ker in Bot. Mag.* t. 702.—Iris tripetala, *Linn. Suppl.* 92; *Jacq. Ic.* t. 221. *C. B. Spei.*

2. V. MUTILA, *Klatt in Linnæa,* xxxiv. 621.—Iris mutila, *Licht. in Roem. & Schult. Syst. Veg.* i. 477. *C. B. Spei.*

3. V. UNGUICULARIS, *Roem. & Schult. Syst. Veg.* i. 491.—Moræa unguiculata, *Ker in Bot. Mag.* t. 593. *C. B. Spei.*

4. V. TRICUSPIS, *Spreng. Syst. Veg.* i. 165.—V. aristata, *Houtt. Handl.* xii. 105, t. 80, *non Delaroche.*—Iris tricuspidata, *Linn. fil. Suppl.* 98. —Moræa tricuspis, *Ker in Bot. Mag.* t. 696.—Iris tricuspis, *Jacq. Ic.* t. 222. fig. sinistr. *C. B. Spei.*

5. V. GLAUCOPIS, *DC. in Ann. Mus.* ii. 141; *Red. Lil.* t. 42; *Flore des Serres,* t. 423.—Iris pavonia, *Curt. Bot. Mag.* t. 168, *non aliorum.* —I. tricuspis, *Jacq. Coll.* iv. t. 9. fig. 1.—Moræa tricuspis, var., *Ker in Bot. Mag. sub* t. 696. *C. B. Spei.*

6. V. TENUIS, *Roem. & Schult. Syst. Veg.* i. 491.—Iris tricuspis, var., *Jacq. Ic.* t. 222. fig. dextr.—Moræa tenuis, *Ker in Bot. Mag.* t. 1047. —? Iris gracilis, *Licht. in Roem. & Schult. Syst. Veg.* i. 477. *C. B. Spei.*

7. V. SPIRALIS, *Delaroche, Diss.* xxxi. t. 5.—Moræa tricuspis, var. lutea, *Ker in Bot Mag.* t. 772.—V. Bellendeni, *Sweet, Hort. Brit.* edit. ii. 498. *C. B. Spei.*

8. V. PAVONIA, *DC. in Ann. Mus.* ii. 139.—Iris pavonia, *Linn. Suppl.* 98; *Thunb. Diss.* No. 35, tab. 1. fig. 3; *Jacq. Hort. Schoen.* t. 10; *Andr. Bot. Rep.* t. 61.—Moræa pavonia, *Ker in Bot. Mag.* t. 1247. *C. B. Spei.*

9. V. VILLOSA, *Spreng. Syst. Veg.* i. 165.—Iris villosa, *Ker in Bot. Mag.* t. 571,—Moræa pavonia, *Ker in König & Sims, Ann.* i. 240.— Iris tricuspis, var., *Thunb. Diss.* No. 15. *C. B. Spei.*

Species mihi incognitæ.

10. V. FUGAX, *Delaroche, Diss.* 33. *C. B. Spei.*

11. V. ARISTATA, *Delaroche, Diss.* 33. *C. B. Spei.*

43. HERBERTIA, *Sweet.*

Sweet, Brit. Flow. Gard. t. 222; *Klatt in Linnæa,* xxxi. 553.— Trifurcia, *Herbert in Bot. Mag. sub* t. 3779.—Roterbe, *Steud. in Leichler, Pl. Peruv.* No. 398, non *Klatt.*

Perianthium regulare erectum, tubo supra ovarium nullo, segmentis valde difformibus, exterioribus obovato-cuneatis obtusis cuspidatis, interioribus multo minoribus planis sæpissime oblanceolatis acutis. *Stamina* 3 epigyna, filamentis in tubum cylindricum prorsus connatis, antheris sessilibus ligulatis ascendentibus. *Ovarium* clavatum triloculare, ovulis in loculo crebris; *stylus* filiformis, ramis stigmatosis subulatis vel applanatis integris vel 2-3-cuspidatis. *Capsula* coriacea clavata operculata apice loculicide trivalvis, seminibus crebris minutis turgidis testa atro-brunnea, albumine corneo. *Herbæ Americanæ bulbosæ humiles, bulbi tunicis membranaceis brunneis, foliis linearibus plicatis, caulibus teretibus sæpissime simplicibus, spathis paucifloris cylindricis terminalibus pedunculatis valvis lanceolatis acutis, pedicellis spathæ subæquilongis, floribus parvis successivis fugitivis cæruleis.*

Texanæ.

1. H. DRUMMONDIANA, *Herbert in Bot. Reg.* xxviii. *Misc.* 65. *Texas.*

2. H. CÆRULEA, *Herbert in Bot. Mag.* 3862, fig. *d, e, f.*—Trifurcia cærulea, *Herb. in Bot. Mag. sub* t. 3779. *Texas.*

Austro-Americanæ.

3. H. PULCHELLA, *Sweet, Brit. Flow. Gard.* t. 222; *Lodd. Bot. Cab.* t. 1547; *Herb. in Bot. Mag.* t. 3862, figs. 1 & 2.—Roterbe bulbosa, *Steud. in Lech. Pl. Chil.* No. 298.—H. cærulea, *Klatt, Linnæa,* xxxi. 554, *non Herbert. Chili, Brasilia meridionalis, Bonaria.*

4. H. UMBELLATA, *Klatt in Linnæa,* xxxi. 555; *Fl. Bras.* iii. 350, tab. 69. fig. 1. *Brasilia meridionalis.*

5. H. BRASILIENSIS, *Baker.*—H. Drummondiana, *Klatt in Linnæa,* xxxi. 555, *non Herbert. Brasilia meridionalis.*

6. H. UNGUICULATA, *Baker. Brasilia meridionalis.*

44. RIGIDELLA, *Lindl.*

Lindl. in Bot. Reg. 1840, t. 16, *Misc.* No. 64.

Perianthium regulare cernuum vel erectum, tubo supra ovarium nullo, segmentis valde difformibus, exterioribus oblongo-unguiculatis flore expanso ad medium reflexis vel patulis, interioribus minutis occultis cordato-ovatis cuspidatis unguiculatis. *Stamina* 3 epigyna æquilateralia stigmatibus opposita, filamentis in tubum cylindricum prorsus connatis, antheris ligulatis erectis. *Ovarium* clavatum triloculare, ovulis in loculo crebris; *stylus* filiformis, stigmatibus tribus tripartitis ramulis subulatis exterioribus productis centrali brevissimo cornuto. *Capsula* clavata operculata, apice loculicide trivalvis, seminibus globosis, testa brunnea, raphe et chalaza conspicuis, albumine corneo. *Herbæ bulbosæ Mexicanæ et Guatemalenses, bulbi tunicis brunneis membranaceis, foliis loratis plicatis, caulibus teretibus ramosis, spathis multifloris valvis exterioribus viridibus lanceolatis, floribus splendide coccineis successivis fugitivis.*

1. R. FLAMMEA, *Lindl. loc. cit.* *Mexico.*

2. R. IMMACULATA, *Herbert in Bot. Reg.* 1841, t. 68. *Guatemala.*

3. R. ORTHANTHA, *Paxton, Mag.* xiv. 121, cum icone. *Mexico.*

45. HYDROTÆNIA, *Lindl.*

Lindl. in Bot. Reg. 1838, *Misc.* 128.

Perianthium regulare cernuum campanulatum, tubo supra ovarium nullo, segmentis paullo difformibus, exterioribus oblongis acutis diu ascendentibus, interioribus æquilongis oblongo-quadratis obtusis cuspidatis basi cordatis breviter unguiculatis supra unguem maculatum zona transversali deltoidea crystallina instructis. *Stamina* 3 æquilateralia epigyna, filamentis in tubum cylindricum prorsus connatis, antheris stigmatibus oppositis ligulatis suberectis connectivo lato breviter producto apiculatis. *Ovarium* clavatum triloculare, ovulis in loculo crebris; *stylus* filiformis, ramis stigmatosis trifurcatis ramulis applanatis exterioribus elongatis, centrali brevi. *Capsula* clavata membranacea operculata. Semina non vidi. *Herba bulbosa Mexicana, bulbi tunicis brunneis membranaceis, foliis superpositis plicatis, caulibus teretibus ramosis, spathis paucifloris, valvis lanceolatis viridibus, floribus successivis fugitivis.*

1. H. MELEAGRIS, *Lindl. loc. cit.*; *Bot. Reg.* xxxviii. t. 39. *Mexico.*

46. TIGRIDIA, *Juss.*

Juss. Gen. 57; *Ker, Gen. Irid.* 25; *Klatt in Linnæa,* xxxi. 550. —Beatonia, *Herbert in Bot. Mag. sub* t. 3779; *Klatt in Linnæa,* xxxi. 565.—Ferrariæ *et* Moreæ sp. *auct. vet.*

Perianthium regulare erectum, tubo supra ovarium nullo, segmentis valde difformibus, exterioribus oblongis, interioribus panduriformibus convolutis multo minoribus. *Stamina* 3 epigyna, filamentis in tubum cylindricum prorsus connatis, antheris sessilibus ligulatis suberectis. *Ovarium* clavatum triloculare, ovulis in loculo crebris; *stylus* filiformis, ramis stigmatosis subulatis profunde bifidis. *Capsula* membranacea clavata operculata triloculicide trivalvis, seminibus parvis angulatis, testa brunnea, albumine corneo. *Herbæ bulbosæ Americanæ tropicales, foliis paucis superpositis linearibus plicatis, caulibus teretibus simplicibus vel parce ramosis, spathis pedunculatis terminalibus paucifloris, valvis exterioribus viridibus lanceolatis acutis, pedicellis elongatis, floribus speciosis successivis fugitivis.*

* EUTIGRIDIA. *Grandiflora, stigmatibus secus stylos decurrentibus.*

1. T. **PAVONIA**, *Ker in König & Sims, Ann.* i. 246.—Ferraria Pavonia, *Linn. fil. Suppl.* 407; *Cav. Diss.* vi. 342, t. 189. fig. 1; *Andr. Bot. Rep.* t. 178; *Red. Lil.* t. 6; *Lodd. Bot. Cab.* t. 1424; *Klatt in Mont. Fl. Bras.* iii. t. 70.—F. Tigridia, *Ker in Bot. Mag.* t. 532.—Moræa Tigridia, *Thunb. Diss.* No. 20.—Tigridia grandiflora, *Salisb. in Trans. Hort. Soc.* i. 309. *Mexico, Guatemala.*

Var. T. **CONCHIFLORA**, *Sweet, Brit. Flow. Gard.* t. 128; *Paxt. Mag.* xiv. 53; *Flore des Serres*, t. 908–910; *Ann. Gand.* 1847, t. 145.—T. oxypetala, *Morison, Fl. Conspic.* t. 20. *Mexico.*

** BEATONIA. *Parvifloræ, stigmatibus ad apicem stylorum capitatis.*

2. T. **LUTEA**, *Link, Klotzsch & Otto, Ic.* t. 34; *Baker in Bot. Mag.* t. 6295.—Sisyrinchium grandiflorum, *Cav. Ic.* t. 192 (mala).—Beatonia lutea, *Klatt in Linnæa*, xxxi. 566. *Peruvia et Chili.*

3. T. **VIOLACEA**, *Schiede; Schlecht. in Otto & Dietr. Gartenzeit.* 1838, 233; *Link, Klotzsch & Otto, Ic.* t. 20.—Beatonia purpurea, *Herb. in Bot. Mag. sub* t. 3779. *Mexico.*

4. T. **VAN HOUTTEI**, *Roezl in Flore des Serres*, t. 2174. *Mexico.*

5. T. **ATRATA**, *Baker.*—Beatonia atrata, *Herb. in Bot. Reg.* 1843, *Misc.* 72. *Mexico.*

6. T. **CURVATA**, *Baker.*—Beatonia curvata, *Herb. in Bot. Reg.* 1843, *Misc.* 74. *Mexico.*

47. IRIS, *Tourn.*

Tourn. Instit. t. 186-8; *Linn. Gen.* No. 59, ex parte; *Ker, Gen.*

Irid. 45, ex parte; *Spach, Veg. Phan.* xiii. 12; *Klatt in Linnæa,* xxxiv. 591.—Evansia, *Salisb. in Trans. Hort. Soc.* i. 303.—Dietes, *Salisb. in Trans. Hort. Soc.* i. 307; *Klatt in Linnæa,* xxxiv. 583.—Xiphion, *Parl. Fl. Ital.* iii. 293, *ex parte*; *Alefeld in Bot. Zeit.* 1863, 296, *ex parte.*—Neubeckia, *Alefeld in Mohl & Schlecht. Bot. Zeit.* xxi. 1863, 297; *Klatt in Linnæa,* xxxiv. 587.—Oncocyclus, *Siem. in Mohl. & Schlecht. Bot. Zeit.* 1846, 705; *Klatt in Linnæa,* xxxiv. 578.—Xyridion *et* Ioniris, *Klatt in Bot. Zeit.* 1872, 499–502.

Perianthium regulare erectum, tubo supra ovarium brevi vel elongato, limbi late infundibularis segmentis difformibus, tribus exterioribus obovato-unguiculatis flore expanso falcatis, unguibus nudis vel barbatis vel cristatis, interioribus obovato- vel oblanceolato-spathulatis sæpissime erectis, exterioribus minoribus interdum perparvis interdum cum exterioribus patulis. *Stamina* 3 stigmatibus opposita ad faucem tubi inserta erecta, filamentis angustis applanatis, antheris ligulatis basifixis filamento æquilongis vel longioribus. *Ovarium* triloculare, ovulis in loculo crebris horizontalibus; *stylus* filiformis, stigmatibus magnis quadratis petaloideis apice cristis duabus lanceolatis vel petaloideis reflexis subintegris vel serrulatis præditis. *Capsula* magna oblonga loculicide trivalvis, seminibus multis globosis vel leviter compressis, testa crassa lucida brunnea vel interdum coccinea, albumine corneo. *Herbæ præsertim regionis borealis temperatæ, rhizomate obliquo crasso, foliis basalibus pluribus persistentibus flabellato-distichis linearibus vel ensiformibus, caule simplici vel corymboso foliis paucis reductis prædito, spathæ paucifloræ vel unifloræ valvis magnis lanceolatis arcte imbricatis viridibus vel margine membranaceis, floribus speciosis magnis modice persistentibus vel fugitivis sæpissime luteis vel lilacino-purpureis.*

Series I. *Species regionis borealis temperatæ, segmentis interioribus sæpissime erectis.*

Subgenus I. Apogon. *Perianthii segmenta exteriora unguibus nudis.* Limniris, Xyridion, et Spathula, *Tausch in Ræm. & Schult. Syst. Veg.* i. *Suppl.* 370.

* *Folia linearia.*

1. I. humilis, *M. Bieb. Fl. Taur. Cauc.* i. 33; *Cent. Ross.* t. 13.—Neubeckia humilis, *Alefeld in Bot. Zeit.* 1863, 297.—I. ruthenica,

Ker, Gen. Irid. 54, ex parte.—Ioniris humilis, *Klatt in Bot. Zeit.* 1872, 502. *Rossia meridionalis, Transylvania, Siberia occidentalis.*

2. I. CRETENSIS, *Janka in Œstr. Bot. Zeit.* 1867, 376.—I. stylosa, var. angustifolia, *Boiss. Diag.* xiii. 15.—I. humilis, *Sieber, Pl. Cret. Exsic. non M. B. Græcia, Asia minor, Creta, Insulæ Ionicæ.*

3. I. UNGUICULARIS, *Poiret, Iter*, ii. 56.—I. stylosa, *Desf. Fl. Atlant.* i. 40, t. 5; *Hook. fil. Bot. Mag.* t. 5773.—Neubeckia stylosa, *Alefeld in Bot. Zeit.* 1863, 297.—Ioniris stylosa, *Klatt in Bot. Zeit.* 1872, 502. *Algeria.*

4. I. VENTRICOSA, *Pallas, Iter*, iv. 455; *App.* 682, t. 27. fig. 1.—Xyridion ventricosum, *Klatt in Bot. Zeit.* 1872, 500. *Siberia orientalis.*

5. I. TENUIFOLIA, *Pallas, Iter*, iv. 302; *App.* 683, tab. 7. fig. 2.—Neubeckia tenuifolia, *Alefeld in Bot. Zeit.* 1863, 297.—Ioniris tenuifolia, *Klatt in Bot. Zeit.* 1872, 502.—I. acaulis, *Pallas, Iter*, iii. 313. *Siberia.*

6. I. SONGARICA, *Schrenck, Enum.* i. 3.—Ioniris songarica, *Klatt in Bot. Zeit.* 1872, 502. *Asia centralis.*

7. I. MACROSIPHON, *Torrey, Bot. Whipple*, 144.—I. Douglasiana, *Torrey, Bot. Whipple*, 144, *non Herb. California.*

8. I. RUTHENICA, *Dryand. in Ait. Hort. Kew.* edit. 2, i. 117; *Bot. Mag.* t. 1123 et 1393.—Ioniris ruthenica, *Klatt in Bot. Zeit.* 1872, 502.—Iris cæspitosa, *Pallas in Link, Jahrb.* iii. 71.—I. verna, *Pallas, Iter*, iii. 213, *non Linn. Transylvania, Siberia.*

9. I. DOUGLASIANA, *Herb. in Hook. & Arn. Bot. Beech.* 385; *Hook. fil. Bot. Mag.* t. 6083. *California.*

Var. I. BEECHEYANA, *Herb. in Hook. & Arn. Bot. Beech.* 395. *California.*

10. I. TOLMIEANA, *Herb. in Hook. & Arn. Bot. Beech.* 395.—? I. missouriensis, *Nuttall in Journ. Acad. Phil.* vii. 58. *California, Oregon, Nevada.*

11. I. TRIPETALA, *Walt. Fl. Carol.* 66, *non Linn. fil.*—I. tridentata, *Sweet. Brit. Flow. Gard.* t. 274, *non Pursh. Carolina ad Floridam.*

12. I. TENAX, *Douglas in Bot. Reg.* t. 1218; *Hook. Bot. Mag.* t. 3343. —Ioniris tenax, *Klatt in Bot. Zeit.* 1872, 502. *America borealis.*

13. I. HARTWEGII, *Baker in Gard. Chron.* 1876, 323. *California.*

14. I. PRISMATICA, *Pursh, Fl. Amer. Sept.* i. 30; *Bot. Mag.* t. 1504. —I. virginica, *A. Gray, Man.* edit. v. 516, *non Linn.*—I. gracilis, *Bigelow, Flor. Bost.* 12.—I. Boltoniana, *Roem. & Schultes, Syst. Veg.* i. *Suppl.* 308. *America borealis orientalis.*

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62. I. HAYNEI, *Baker in Gard. Chron* 1876, ii. 710. *Palæstina.*

*** *Stirps* I. variegatæ.

63. I. APHYLLA, *Linn. Sp. Plant.* edit. 2, 56.—I. nudicaulis, *Lam. Encyc.* iii. 296; *Reich. Ic. Germ.* tab. 331. fig. 758.—I. bohemica, *F. W. Schmidt, Fl. Bohem. Cent.* iv. 5.—I. hungarica, *Waldst. & Kit. Plant. Rar. Hung.* tab. 226.—I. biflora, *Reich. Ic. Fl. Germ.* tab. 332. fig. 759, *non Linn.*—I. bisflorens, *Hort. Fl. Austr.* i. 46.—I. furcata, *M. Bieb. Fl. Taur. Cauc.* iii. 42; *Bot. Mag.* tab. 2361; *Bot. Reg.* tab. 801.—I. Clusiana, *Tausch*; *Klatt in Linnæa,* xxxiv. 598.—I. falcata, *Tausch*; *Roem. & Schult. Syst. Veg.* i. *Suppl.* 369.—I. scariosa, *Willd.*; *Roem. & Schult. Syst. Veg.* i. *Suppl.* 305.—I. Fieberi, *Siedl. in Oek. tech. Fl. Böhm.* i. 48; *Reich. Ic. Fl. Germ.* tab. 333. fig. 760.—I. rigida, *et* subtriflora, *Fieber*; *Klatt in Linnæa,* xxxiv. 598–9.—I. diantha, *K. Koch in Linnæa,* xxi. 637.—I. extrafoliacea, *Mikan.*—I. Schmidtii, *Hort.*—I. bifurca, *Steven, MSS.* *Europa centralis orientalis, Caucasus.*

64. I. VARIEGATA, *Linn. Sp. Plant.* edit. 2, 56; *Jacq. Fl. Austr.* t. 5; *Curt. Bot. Mag.* t. 16; *Red. Lil.* t. 292; *Reich. Ic. Fl. Germ.* tab. 334. fig. 761. *Europa centralis orientalis.*

Var. BELGICA, *Spach, Hist. Phan.* xiii. 57.

65. I. LURIDA, *Soland. in Ait. Hort. Kew.* i. 68; *Bot. Mag.* t. 986, *non* 669; *Red. Lil.* t. 418. *Europa centralis orientalis.*

Var. I. REDOUTEANA, *Spach, Hist. Phan.* xiii. 56.

**** *Stirps* I. germanicæ.

66. I. FLAVESCENS, *DC. in Red. Lil.* t. 375; *Sweet, Brit. Flow. Gard.* ser. ii. 56; *Reich. Ic. Crit.* t. 921.—I. imbricata, *Lindl. Bot. Reg.* 1845, t. 35.—I. sulphurea, *K. Koch in Linnæa,* xxi. 637. *Bosnia, Caucasus.*

67. I. SQUALENS, *Linn. Sp. Plant.* edit. 2, 56; *Bot. Mag.* t. 787; *Jacq. Fl. Austr.* t. 5; *Reich. Ic. Crit.* t. 993; *Ic. Fl. Germ.* tab. 336.—I. lurida, *Bot. Mag.* t. 669; *Reich. Ic. Fl. Germ.* tab. 337. fig. 764.—I. lepida, *Heuffel in Flora,* 1856, 621. *Europa centralis, Caucasus, Persia borealis.*

Var. LAVANDULACEA, *Baker in Gard. Chron.* 1876, ii. 774.

Var. ATROPURPUREA, *Baker, loc. cit.*

68. I. SAMBUCINA, *Linn. Sp. Plant.* edit. 2, 55; *Jacq. Hort. Vind.* t. 2; *Curt. Bot. Mag.* t. 187; *Reich. Ic. Fl. Germ.* tab. 335. fig. 762. *Europa centralis, Armenia.*

Var. I. CONCOLOR, *Baker in Gard. Chron.* 1876, ii. 774.

69. I. NEGLECTA, *Horn. Hort. Hafn.* i. 55; *Bot. Mag.* t. 2435. *Stirps hortensis.*

70. I. HYBRIDA, *Retz. Obs. Bot.* iv. 6.—I. amœna, *DC. in Red. Lil.* t. 336; *Sweet, Brit. Flow. Gard.* ser. ii. t. 165.—I. variegata, var. amœna, *Spach, Hist. Phan.* xiii. 58. *Stirps hortensis.*

71. I. GERMANICA, *Linn. Sp. Plant.* edit. 2, 55; *Bot. Mag.* t. 670; *Red. Lil.* t. 309; *Reich. Ic. Crit.* t. 924; *Ic. Fl. Germ.* tab. 338. fig. 565.—I. deflexa, *Knowles & Westc. Floral Cab.* ii. 19, t. 51.—I. nepalensis, *Wall. in Lindl. Bot. Reg.* t. 818, *non D. Don.*—I. violacea, *Savi, Bot. Etrusc.* ii. 9. *Europa centralis et meridionalis.*

***** *Stirps* I. pallidæ.

72. I. FLORENTINA, *Linn. Sp. Plant.* edit. 2, 55; *Bot. Mag.* t. 671; *Red. Lil.* t. 23; *Sibth. Fl. Græc.* t. 39; *Reich. Ic. Pl. Germ.* tab. 339. fig. 766; *Woodville, Med. Bot.* iv. t. 263; *Bentley & Trimen, Med. Plants,* t. 273.—I. alba, *Savi, Fl. Pis.* i. 32. *Europa meridionalis.*

Var. I. ALBICANS, *Lange, Ic. Plant. Hisp.* t. 33. *Hispania.*

73. I. PALLIDA, *Lam. Encyc.* iii. 294; *Bot. Mag.* tab. 685; *Red. Lil.* t. 366; *Reich. Ic. Crit.* fig. 1243; *Ic. Fl. Germ.* tab. 340. fig. 767.—I. germanica, *Sibth. & Sm. Fl. Græc.* t. 40, *non Linn.*—I. pallide-cærulea, *Pers. Syn.* i. 51.—I. odoratissima, *Jacq. Hort. Schoen.* tab. 9.—I. glauca, *Salisb. in Trans. Hort. Soc.* i. 302.—I. hortensis, *Tausch.*—? I. Cengialti, *Ambrosi, Fl. Tyrol. Austr.* i. 643. *Europa meridionalis, Oriens.*

Var. I. JUNONIA, *Schott & Kotschy in Œster. Bot. Wochen.* 1854, 209. *Cilicia.*

Var. I. CUCULLATA, *Schur, Fl. Transyl.* 654. *Transylvania.*

Var. I. AUSTRALIS, *Todaro, Nuov. Gen.* 49. *Sicilia.*

Var. I. MANDRALISCÆ, *Todaro, Nuov. Gen.* 42. *Sicilia.*

Var. I. TINÆI, *Todaro, Nuov. Gen.* 42. *Sicilia.*

Var. I. SICULA, *Todaro, Nuov. Gen.* 7. *Sicilia.*

74. I. PLICATA, *Lam. Encyc.* iii. 294.—I. aphylla, var. plicata, *Ker in Bot. Mag.* t. 870. *Stirps hortensis.*

75. I. SWERTII, *Lam. Encyc.* iii. 294 (*Swert, Floril.* tab. 41. fig. 1); *Red. Lil.* t. 306; *Reich. Ic. Crit.* fig. 1239; *Sweet, Brit. Flow. Gard.*

ser. ii. t. 254.—I. aphylla, var. Swertii, *Ker in Bot. Mag. sub* t. 870. —I. desertorum, *Balbis, Hort. Taur.* t. 2, *non Moench.*—I. portugalensis, *Besler. Stirps hortensis.*

Subgenus V. HEXAPOGON. *Perianthii segmenta omnia unguibus barbatis.*

76. I. LONGISCAPA, *Ledeb. Fl. Ross.* iv. 93.—I. filifolia, *Bunge, Rel. Lehm.* 330. *Asia centralis, Siberia uralensis.*

77. I. FALCIFOLIA, *Bunge, Rel. Lehm.* 329. *Asia centralis, Afghanistan.*

Series II. DIETES, *Salisb. Species austro-africanæ et australienses, perianthii tubo nullo, segmentis omnibus flore expanso late patulis.* Moræa, *Miller, ex parte.*

* *Africanæ.*

78. I. COMPRESSA, *Linn. fil. Suppl.* 98.—Moræa iridoides, *Linn. Mant.* 28; *Ker in Bot. Mag.* t. 693; *Jacq. Hort. Schoen.* t. 196 (excl. syn.). —M. vegeta, *Miller, Gard. Dict.* edit. 6 (*Ic.* t. 239. fig. 1), *non Linn. herb.*—M. irioides, *Gaertn. Fruct.* i. 40.—Iris moræoides, *Ker in Bot. Mag. sub* t. 1407.—Dietes iridifolia, *Salisb. in Trans. Hort. Soc.* i. 307.—D. iridoides, *Sweet, Brit. Flow. Gard.* edit. 2, 497.—D. compressa, *Klatt in Linnæa,* xxxiv. 585.—Iris crassifolia, *Lodd. Bot. Cab.* t. 1861. *C. B. Spei.*

79. I. CATENULATA, *Baker.*—Moræa catenulata, *Ker in Bot. Reg.* t. 1074.—Dietes catenulata, *Sweet, Brit Flow. Gard.* edit. 2, 497. *Madagascaria.*

80. I. BICOLOR, *Lindl. Bot. Reg.* t. 1404; *Lodd. Bot. Cab.* t. 1886; *Paxt. Mag.* ix. 29.—Moræa bicolor, *Spae in Flore des Serres,* t. 744. —Dietes bicolor, *" Sweet," Klatt in Linnæa,* xxxiv. 584. *C. B. Spei.*

** *Australiensis.*

81. I. ROBINSONIANA. *F. Muell. Fragm.* vii. 153; *G. Bennett in Gard. Chron.* 1872, 393, *cum icone.*—Moræa Robinsoniana, *F. M. loc. cit.*; *Benth. Fl. Austral.* vi. 409. *Insula Lord Howe.*

48. HERMODACTYLUS, *Tourn.*

Tourn. Coroll. 50; *Adans. Fam.* ii. 60; *Salisb. in Trans. Hort. Soc.* i. 304; *Klatt in Linnæa,* xxxiv. 582.—Iridis sp., *Linn. etc.*

Perianthium regulare erectum, tubo supra ovarium brevissimo infundibulari, segmentis exterioribus obovato-spathulatis, unguibus calvis, flore expanso apice reflexis, interioribus multo minoribus erectis oblanceolato-spathulatis. *Stamina* 3 ad faucem perianthii inserta stigmatibus opposita, antheris ligulatis basifixis filamento æquilongis. *Ovarium* uniloculare, placentis tribus parietalibus, ovulis plurimis; *stylus* brevissimus, stigmatibus tribus magnis petaloideis apice 2-cristatis. *Capsula* coriacea unilocularis apice loculicide trivalvis, seminibus globosis, testa crassa brunnea, albumine corneo. *Herba perennis mediterranea, rhizomate digitato, foliis paucis tetragonis, caule debili elongato simplici unifloro, spatha sæpissime univalvi, floribus sordide purpureis flavo-viridibus.*

1. H. TUBEROSUS, *Salisb. in Trans. Hort. Soc.* i. 304.—Iris tuberosa, *Linn. Sp. Plant.* edit. 58; *Bot. Mag.* t. 531; *Red. Lil.* t. 48; *Sibth. & Sm. Fl. Græc.* t. 41; *Eng. Bot.* edit. 3, t. 1496; *Flore des Serres*, t. 1083; *Reich. Ic. Germ.* t. 348.—H. repens, *Sweet, Brit. Flow. Gard.* 2nd ser. *sub* t. 146. *Regio mediterranea.*

Var. H. LONGIFOLIUS, *Sweet, Brit. Flow. Gard.* ser. ii. t. 146.—Iris longifolia, *Spach, Hist. Phan.* xiii. 14.

Var. H. BISPATHACEUS, *Sweet, loc. cit.* (*Bot. Mag.* t. 531).—Iris bispathacea, *Spach, Hist. Phan.* xiii. 15.

49. DIPLARRHENA, *Labill.*

Labill. Voy. i. 157, t. 15; *R. Br. Prodr.* 304; *Ker, Gen. Irid.* 44; *Klatt in Linnæa.* xxxiv. 586; *Benth. Fl. Austral.* vi. 399.—Moreæ sp., *Vahl.*

Perianthium subregulare leviter obliquum, tubo supra ovarium nullo, segmentis dissimilibus, tribus exterioribus æqualibus majoribus obovato-cuneatis obtusis flore expanso falcatis, interioribus minoribus obtusis cuneatis supremo latiore leviter fornicato. *Stamina* 3 epigyna inæqualia, cum perianthii segmento interiore supremo arcuato, 2 fertilia filamentis subulatis antheris parvis oblongo-ligulatis, tertium sterile longiore appendice apicali petaloidea. *Ovarium* clavatum, ovulis in loculo crebris; *stylus* brevis filiformis, ramis tribus angustis petaloideis apice emarginatis cuspidibus brevibus patulis. *Capsula* coriacea anguste oblonga trigona apice loculicide trivalvis, seminibus discoideis uniseriatis, testa atro-castanea, albumine corneo. *Herbæ perennes australienses, rhizomate brevi, foliis rosulatis distichis duris linearibus, caulibus ancipitibus simplicibus vel parce ramosis foliis paucis reductis præditis, spathis paucifloris valvis exterioribus lanceolatis acutis firmis viridibus striatis,* *pedicellis cum spatha æquilongis, floribus fugitivis successivis magnitudine mediocribus sæpissime albis. Ab* Irideis *ad* Gladeoleas *recedit perianthii segmento interiore supremo fornicato et staminibus inæquilateralibus.*

1. D. MORÆA, *Lab. loc. cit.*—Moræa diandra, *Vahl, Enum.* ii. 154. *Tasmania, Australia australis orientalis.*

Var. ALPINA, *Hook. fil. Fl. Tasm.* ii. 34. *Tasmania.*

2. D. LATIFOLIA, *Benth. Fl. Austral.* vi. 400. *Tasmania.*

50. MARICA, *Ker.*

Ker, Gen. Irid. 16, *ex parte*; *Herbert in Bot. Mag.* t. 3809.—Cypella, *Klatt in Linnæa,* xxxi. 538, *non Herbert.*—Galathea, *Liebm. Ind. Sem. Havn.* 1855.—Morææ *et* Ferrariæ sp. *auct. vet.*

Perianthium regulare erectum, tubo supra ovarium nullo, segmentis valde difformibus omnibus basi maculatis, exterioribus obovato-cuneatis obtusis flore expanso patulis, interioribus lanceolato-panduriformibus acutis multo minoribus diu convolutis. *Stamina* 3 erecta epigyna perianthio multo breviora, filamentis erectis brevibus liberis basi deltoideis, antheris ligulatis basifixis dorso styli ramis adglutinatis. *Ovarium* clavatum triloculare, ovulis in loculo crebris; *stylus* brevis inferne filiformis superne trigonus lobis supra stigmata cristis tribus subulatis inæqualibus præditis. *Capsula* oblongo-trigona coriacea loculicide trivalvis, seminibus crebris angulatis, testa brunnea, albumine corneo. *Herbæ tropicales americanæ, rhizomate brevi, foliis coriaceis elongatis ensiformibus, caulibus planis latis folia simulantibus, ramis floriferis solitariis lateralibus, spathis paucifloris, valvis lanceolatis coriaceis viridibus, floribus magnis successivis fugitivis luteis, cæruleis vel albidis.*

1. M. CÆRULEA, *Ker in Bot. Reg.* t. 713; *Hook. Exot. Flora,* t. 222.—Cypella cærulea, *Seubert*; *Klatt in Linnæa,* xxxi. 538; *Fl. Bras.* iii. 519, t. 66. fig. 2; *Bot. Mag.* t. 5162.—Galathea cærulea, *Liebm. Ind. Sem. Havn.* 1855. *Brasilia.*

2. M. GLAUCA, *Baker.*—Cypella glauca, *Seubert*; *Klatt in Linnæa,* xxxi. 542. *Brasilia.*

3. M. SABINI, *Lindl. in Trans. Hort. Soc.* vi. 75, t. 1; *Lodd. Bot. Cab.* t. 1164.—M. Sabiniana, *Herb. in Bot. Mag. sub* t. 3809. *Africa tropicalis occidentalis* (*inquilina*).

4. M. NORTHIANA, *Ker in Bot. Mag.* t. 654.—Moræa Northiana,

Schneev. Ic. t. 41, 42; *Andr. Bot. Rep.* t. 255.—Cypella Northiana, *Klatt in Linnæa*, xxxi. 539.—Iris Northiana, *Pers. Syn.* i. 52.—Moræa vaginata, *Red. Lil.* t. 56.—Ferraria elegans, *Salisb. Prodr.* 42. *Brasilia.*

5. M. GRACILIS, *Herb. in Bot. Mag.* t. 3713.—Cypella gracilis, *Klatt in Linnæa*, xxxi. 541. *Brasilia.*

6. M. LUTEA, *Herb. in Bot. Mag.* t. 3809.—Cypella lutea, *Klatt in Fl. Bras.* iii. 522. *Brasilia.*

7. M. LONGIFOLIA, *Link, Klotzsch & Otto Ic. Pl. Select.* 123, t. 58.—Cypella longifolia, *Klatt in Linnæa*, xxxi. 540. *Brasilia.*

8. M. HUMILIS, *Lodd. Bot. Cab.* t. 1801.—M. humilis, var. princeps, *Herb. in Bot. Mag. sub* t. 3809.—Cypella humilis, *Klatt in Linnæa*, xxxi. 540. *Brasilia.*

9. M. BRACHYPUS, *Baker.*—Cypella brachypus, *Baker in Gard. Chron.* 1876, 136. *India occidentalis.*

51. PATERSONIA, *R. Brown.*

R. Brown, Prodr. Fl. Austral. 304; *Ker, Gen. Irid.* 14; *Klatt in Linnæa*, xxxiv. 630; *Benth. Fl. Austral.* vi. 400.—Genosiris, *Labill. Nov. Holl.* i. 13, t. 9; *F. Muell. Fragm.* vii. 36.

Perianthium regulare erectum, tubo supra ovarium producto recto filiformi, segmentis exterioribus magnis obtusis obovatis vel oblongis flore expanso patulis, tribus interioribus minimis lanceolatis ascendentibus. *Stamina* 3, ad faucem tubi æquilateraliter inserta, filamentis in tubum cylindricum ad medium vel prorsus connatis, antheris erecto-patentibus oblongis stigmatibus alternis. *Ovarium* cylindricum sessile triloculare sæpe villosum, ovulis in loculo crebris; *stylus* filiformis erectus, stigmatibus tribus obovatis petaloideis patulis basi liberis vel connatis. *Capsula* cylindrica sessilis chartacea loculicide trivalvis, seminibus parvis turgidis dimidiato-oblongis, testa membranacea atro-castanea, albumine corneo. *Herbæ australienses duræ persistentes perennes glabræ vel tomentosæ, rhizomate brevi fibris radicalibus duris gracilibus prædito, foliis dense cæspitosis coriaceis anguste linearibus subtiliter striatis (in* P. babianoidi *plicatis petiolatis), scapis nudis, floribus fugitivis successivis in caput cylindricum unicum terminale congestis, bracteis multis imbricatis lanceolatis, exterioribus duris striatis, interioribus membranaceis, perianthio sæpissime cæruleo raro luteo vel albo.*

1. P. GLAUCA, *R. Brown, Prodr. Fl. Austral.* 304; *Bot. Mag.* t. 2677;

Lodd. Bot. Cab. t. 1182; *Endl. Icon.* t. 50.—Genosiris fragilis, *Labill. Pl. Nov. Holl.* i. 13, t. 9. *Tasmania et Australia australis orientalis.*

2. P. LONGISCAPA, *Sweet, Fl. Austral.* t. 39.—P. bicolor, *F. Muell. MSS. Tasmania et Australia australis.*

3. P. OCCIDENTALIS, *R. Brown, Prodr. Austral.* 304.—Genosiris occidentalis, *F. Muell. Frag.* vii. 31.—P. sapphirina, *Lindl. Bot. Reg.* 1839, t. 60.—P. Diesingii, *Endl. in Pl. Preiss.* ii. 30.—? P. nana, compar, flaccida, sylvestris *et* montana, *Endl. in Pl. Preiss.* ii. 30, 31. *Australia occidentalis,*

Var. LATIFOLIA, *Benth. Fl. Austral.* vi. 403. *Australia occid.*

Var. ? ANGUSTIFOLIA, *Benth. loc. cit.*—P. tenuispatha *et* turfosa, *Endl. in Pl. Preiss.* ii. 31. *Australia occid.*

Var. ? ERIOSTEPHANA, *F. Muell. Fragm.* vii. 32. *Austr. occid.*

4. P. UMBROSA, *Endl. in Pl. Preiss.* ii. 31.—Genosiris umbrosa, *F. Muell. Frag.* vii. 32. *Australia occidentalis.*

5. P. XANTHINA, *F. Muell. Fragm.* i. 214.—Genosiris xanthina, *F. Muell. Fragm.* vii. 33. *Australia occidentalis.*

6. P. LIMBATA, *Endl. in Pl. Preiss.* ii. 29. *Australia occidentalis.*

7. P. JUNCEA, *Lindl. Swan Riv. App.* 58.—Genosiris juncea, *F. Muell. Fragm.* vii. 33.—? P. Roei, *Endl. in Pl. Preiss.* ii. 31. *Australia occidentalis.*

Var. ELONGATA, *Benth. Fl. Austral.* vi. 405. *Australia occidentalis.*

8. P. MAXWELLII, *F. Muell. in Benth. Fl. Austral.* vi. 405.—Genosiris Maxwellii, *F. Muell. Fragm.* vii. 34. *Australia occidentalis.*

9. P. PYGMÆA, *Lindl. Swan. Riv. App.* 58.—Genosiris pygmæa, *F. Muell. Frag.* vii. 33. *Australia occidentalis.*

10. P. LONGIFOLIA, *R. Brown, Prodr. Fl. Austral.* 303.—Genosiris longifolia, *F. Muell. Frag.* vii. 35. *Austral. orient. australis.*

11. P. SERICEA, *R. Brown in Bot. Mag.* t. 1041; *Prodr. Fl. Austr.* 303. —Genosiris sericea, *F. Muell. Fragm.* vii. 35.—? P. glabrata, *Bot. Reg.* t. 51, *non R. Br. Australia orientalis.*

Var. ? LATIFOLIA, *Benth. Fl. Austral.* vi. 406. *Austral. orient.*

12. P. LANATA, *R. Brown, Prodr. Fl. Austral.* 303; *Sweet, Fl. Austr.* t. 15.—Genosiris lanata, *F. Muell. Fragm.* vii. 35. *Australia occidentalis.*

Var. P. PANNOSA, *Endl. Pl. Preiss.* ii. 29. *Austral. occid.*

13. P. RUDIS, *Endl. in Pl. Preiss.* ii. 29.—Genosiris rudis, *F. Muell. Fragm.* vii. 35. *Australia occidentalis.*

14. P. MACRANTHA, *Benth. Fl. Austral.* vi. 407. *Austral. occid.*

15. P. GLABRATA, *R. Brown, Prodr. Fl. Austral.* 304; *Lodd. Bot. Cab.*

t. 768.—Genosiris glabrata, *F. Muell. Frag.* vii. 35.—P. media, *R. Brown, loc. cit. Australia orientalis.*

16. P. **Drummondii**, *F. Muell. in Benth. Fl. Austral.* vi. 407. *Austral. occid.*

17. P. **inæqualis**, *Benth. Fl. Austral.* vi. 408. *Austral. occid.*

18. P. **graminea**, *Benth. Fl. Austral.* vi. 408. *Austral. occid.*

19. P. **babianoides**, *Benth. Fl. Austral.* vi. 408. *Austral. occid.*

52. Libertia, *Spreng.*

Spreng. Syst. Veg. i. 127; *Klatt in Linnæa*, xxxi. 380.—Renealmia, *R. Brown, Prodr. Fl. Austral.* 591; *Ker, Gen. Irid.* 26, *non Linn. fil.*—Nematostigma, *D. Dietr. Synops.* i. 150.—Sisyrinchii sp., *R. Brown, Prodr.* 305; *F. Muell. Frag.* vii. 91.

Perianthium rotatum, regulare, erectum, tubo supra ovarium nullo, segmentis flore expanso patulis, sæpissime inæqualibus interioribus majoribus, exterioribus minoribus magis brunneolis vel viridulis. *Stamina* æquilateralia epigyna, filamentis sursum subulatis deorsum connatis, antheris oblongo-ligulatis versatilibus, stigmatibus alternis. *Ovarium* subglobosum, ovulis in loculo plurimis; *stylus* filiformis profunde trifurcatus, ramis subulatis integris falcatis apice capitato-stigmatosis. *Capsula* parva coriacea globosa vel obovoidea loculicide trivalvis, seminibus minutis triquetris, testa membranacea brunnea, albumine corneo. *Herbæ perennes australienses, novæ-zelandicæ et americanæ austro-occidentales, radicibus fibrosis, foliis radicalibus distichis anguste linearibus firmis dense congestis, caulibus teretibus foliis paucis valde reductis instructis, inflorescentia sæpissime laxe corymboso-paniculata spathis paucifloris, valvis paucis lanceolatis pedicellis elongatis, interdum minus ramosa, floribus dense congestis pedicellis brevibus, perianthio albo, raro cæruleo, haud fugitivo.*

* *Laxifloræ, pedicellis productis.*

1. L. **pulchella**, *Spreng. Syst.* i. 169.—Sisyrinchium pulchellum, *R. Br. Prodr.* 305.—Renealmia pulchella, *R. Brown, Prodr.* 592.—Nematostigma pulchellum, *Dietr. Synops.* 151.—Libertia micrantha, *A. Cunn. in Hook. fil. Flor. New Zeal.* i. 252.—L. Lawrencii, *Hook. fil. Fl. Tasm.* ii. 34, t. 129. *Nova Zealandia, Tasmania, Australia austro-orientalis.*

2. L. **tricocca**, *Philippi in Linnæa*, xxix. 63. *Chili.*

3. L. **ixioides**, *Spreng. Syst.* i. 168; *Reich. Hort.* t. 157.—Sisyrin-

chium ixioides, *Forst. Prodr.* No. 325.—Moræa ixioides, *Thunb. Diss Moræa*, No. 7.—Ferraria ixioides, *Willd. Sp. Plant.* iii. 588.—Renealmia ixioides, *Ker, Gen. Irid.* 27.—Nematostigma ixioides, *Dietr. Synops.* 150.—L. restioides, *Klatt in Linnæa*, xxxi. 383. *Nova Zealandia.*

4. L. ELEGANS, *Poepp. Frag. Synops.* 1.—L. ixioides, *C. Gay, Fl. Chil.* vi. 31, *non Spreng.*—Roterbe elegans, *Steud. in Lechl. Pl. Chil. Exsic.* No. 569.—L. chilensis, *Klotzsch, MSS.*—Marica micrantha, *Ker, Gen. Irid.* 22.—Bermudiana Narcisso-Leucoji flore, *Feuill. Peruv.* iii. 9, t. 4. *Chili.*

5. L. PANICULATA, *Spreng. Syst.* i. 168 ; *Bot. Mag.* t. 6263.—Sisyrinchium paniculatum, *R. Br. Prodr.* 305.—Renealmia paniculata, *R. Br. Prodr.* 592.—Nematostigma paniculatum, *Dietr. Synops.* 151. *Australia orientalis et australis.*

6. L. GRANDIFLORA, *Sweet, Hort. Brit.* edit. 1, 498.—Renealmia grandiflora, *R. Br. Prodr.* 592.—Libertia macrocarpa, *Klatt in Linnæa*, xxxi. 384. *Nova Zealandia.*

** *Densifloræ, pedicellis brevibus.*

7. L. FORMOSA, *Grah. in Edinb. New Phil. Journ.* xv. 383 ; *Lindl. in Bot. Reg.* t. 1630 ; *Bot. Mag.* t. 3294.—L. ixioides, *Klatt in Mart. Fl. Bras.* iii. 530, tab. 68. fig. 2, *non Spreng.* *Chili.*

Var. L. CRASSA, *Grah. loc. cit.* *Chili.*

8. L. CŒRULESCENS, *Kunth in Linnæa*, xix. 382.—Sisyrinchium sessiliflorum, *Hook. & Arn. Bot. Beechey*, 47. *Chili.*

53. ANOMATHECA, *Ker.*

Ker in König & Sims, Ann. i. 227 ; *Gen. Irid.* 111 ; *Klatt in Linnæa*, xxxii. 774.—Gladiolæ *et* Ixiæ sp. *auct. vet.*

Perianthium subregulare vel leviter irregulare tubo supra ovarium elongato cylindrico leviter curvato, segmentis oblongis subæqualibus flore expanso irregulariter patulis, tribus inferioribus magis patulis, fauce maculatis. *Stamina* 3 ad faucem tubi inserta secunda arcuata, filamentis brevibus filiformibus, antheris linearibus basifixis contiguis parallelis. *Ovarium* oblongum, triloculare, ovulis in loculo pluribus crebris ; *stylus* filiformis, ex tubo protrusus, stigmatibus tribus brevibus subulatis bifidis ramis divaricatis. *Capsula* parva oblonga vel globosa membranacea loculicide trivalvis, seminibus globosis, testa atro-castanea membranacea nitida, albumine corneo. *Herbæ capenses et africanæ tropicales, bulbi tunicis subtiliter fibroso-reticulatis, foliis* *radicalibus graminoideis flabellatis, caulinis paucis reductis, floribus laxe spicatis, spathis unifloris, valvis parvis lanceolatis acutis integris viridibus, floris limbo albido vel rubro. A* Lapeyrousia *præsertim recedit foliis radicalibus congestis flabellatis et floribus in spicam unicam vel profunde furcatam dispositis.*

1. A. JUNCEA, *Ker in König & Sims, Ann.* i. 227; *Reich. Hort.* t. 111.—Gladiolus junceus, *Linn. Suppl.* 94; *Red. Lil.* t. 141.—Lapeyrousia juncea, *Pourr. Act. Tolos.* iii. 15.—Ixia spicata, *Burm. Fl. Cap.* i. (1768).—Gladiolus polystachyus, *Andr. Bot. Rep.* t. 66.—G. marmoratus, *Lam. Ill.* i. 118.—G. paniculatus, *Pers. Syn.* i. 45.—G. excisus, *Jacq. Hort. Schoen.* t. 491.—Ixia excisa, *Linn. Suppl.* 92, *non Thunb.* —Ixia Gawleri, *Schrad. Journ.* iv. 67.—Gladiolus amabilis, *Salisb. Prodr.* 4.—Ixia emarginata, *Vahl, Enum.* ii. 270.—Gladiolus setifolius, *Linn. Suppl.* 96. *C. B. Spei.*

2. A. CRUENTA, *Lindl. Bot. Reg.* t. 1639; *Lodd. Bot. Cab.* t. 1857; *Paxt. Mag.* i. 103, *cum icone. C. B. Spei, Natal.*

3. A. GRANDIFLORA, *Baker in Trimen's Journ.* 1876, 337. *Africa austro-tropicalis in terra fluminis Zambesi.*

4. A. ANGOLENSIS, *Baker in Trimen's Journ.* 1876, 337. *Angola.*

54. LAPEYROUSIA, *Pourret.*

Pourret in Trans. Acad. Tolos. iii. 79, t. 6 (1788); *Ker, Gen. Irid.* 107, *non Thunb.* (1800).—Ovieda, *Spreng. Syst. Veg.* i. 147; *Klatt in Linnæa,* xxxii. 776.—Meristostigma, *Dietrich, Synops.* i. 126.—Peyrousia, *Sweet, Hort. Brit.* edit. 2, 499.—Sophronia, *Licht. in Roem. & Schultes's Syst. Veg.* i. 482.—Gladioli *et* Ixiæ sp., *Thunb. etc.*

Perianthium subregulare vel leviter irregulare, tubo supra ovarium cylindrico brevi vel elongato plus minus curvato, segmentis oblongo-spathulatis fauce maculatis subæqualibus vel 3 inferioribus minoribus flore expanso magis patulis. *Stamina* 3 ad faucem tubi inserta, filamentis arcuatis brevibus filiformibus sæpissime contiguis parallelis, antheris oblongis basifixis. *Ovarium* triloculare, ovulis in loculo crebris; *stylus* filiformis, ex tubo breviter protrusus, stigmatibus brevibus subulatis bifidis ramis divaricatis. *Capsula* parva oblonga vel globosa torulosa membranacea loculicide trivalvis, seminibus crebris minutis globosis, testa brunnea membranacea, albumine corneo. *Herbæ bulbosæ capenses et africanæ tropicales, bulbi tunicis membranaceis vel fibroso-reticulatis basi circumscissis, foliis paucis* *superpositis linearibus vel loratis caulinis sensim reductis, caulibus sæpe productis ancipitibus profunde furcatis floribus copiosis corymboso-paniculatis, ramis ultimis spicatis, spathis unifloris valvis 2 latis navicularibus viridibus, floribus limbo parvo rubro, cæruleo vel albido.*

* *Brevicolles.*

1. L. CORYMBOSA, *Ker in König & Sims, Ann.* i. 237 ; *Bot. Mag.* t. 595. —Ixia corymbosa, *Linn. Sp. Plant.* i. 51 ; *Jacq. Ic.* t. 288 ; *Houtt. Handl.* xi. 27, t. 77. fig. 1.—Ovieda corymbosa, *Spreng. Syst. Veg.* i. 147.—Peyrousia corymbosa, *Sweet, Hort Brit.* edit. 2, 499.—Meristostigma corymbosum, *Dietr. Synop.* i. 161.—Ixia crispifolia, *Andr. Bot. Rep.* t. 35.—I. fastigiata, *Lam. Encyc.* iii. 337.—Lapeyrousia fastigiata, *Ker in König & Sims, Ann.* i. 237.—L. azurea, *Eckl. Top. Verz.* 41 ; *Plukenet, Alm.* t. 275. fig. 1. *C. B. Spei.*

2. L. PURPUREO-LUTEA, *Baker.*—Ovieda purpureo-lutea, *Klatt in Linnæa,* xxxii. 789. *C. B. Spei.*

3. L. ERYTHRANTHA, *Baker.*—Ovieda erythrantha, *Klotzsch in Peters, Mossamb. Bot.* 516, t. 18. *Africa tropicalis austro-orientalis.*

4. L. ABYSSINICA, *Baker.*—Geissorhiza abyssinica, *R. Brown in App. Salt's Travels.*—Montbretia abyssinica, *Hochst. in Schimp. Pl. Abyss.* No. 329.—M. gallabatensis, *Schwein. in Pl. Gallab. Exsic.* No. 1. *Abyssinia, Gallabat, Angola.*

5. L. MACROCHLAMYS, *Baker in Trimen's Journ.* 1876, 338. *C. B. Spei.*

6. L. DIVARICATA, *Baker in Trimen's Journ.* 1876, 337. *C. B. Spei.*

** *Longicollis acaulis* (Sophronia, *Licht.*).

7. L. FASCICULATA, *Ker in König & Sims, Ann.* i. 237.—Ovieda fasciculata, *Spreng. Syst.* i. 147.—Galaxia plicata, *Jacq. Ic.* t. 292.—Ixia heterophylla, *Willd. Sp. Plant.* i. 159.—Meristostigma heterophyllum, *Dietr. Synops.* i. 161. *C. B. Spei.*

*** *Longicolles caulescentes.*

8. L. FISTULOSA, *Baker.*—Ovieda fistulosa, *Spreng* ; *Klatt in Linnæa,* xxxii. 781. *C. B. Spei.*

9. L. FISSIFOLIA, *Ker in König & Sims, Ann.* i. 237 ; *Bot. Mag.* t. 1246. —Gladiolus fissifolius, *Jacq. Ic.* t. 268.—Ovieda fissifolia, *Spreng. Syst.* i. 147.—Meristostigma fissifolia, *Dietr. Synops.* i. 161.—Peyrousia fissifolia, *Sweet, Hort. Brit.* edit. 2, 499.—Gladiolus bracteatus, *Thunb.*

Prodr. 186.—Lapeyrousia bracteata, *Ker in Bot. Mag. sub* t. 1246.—Peyrousia bracteata, *Sweet, loc. cit.*—Meristostigma bracteata, *Dietr. loc. cit.* *C. B. Spei.*

10. L. MICRANTHA, *Baker.*—Ovieda micrantha, *E. Meyer in herb. Drege*; *Klatt in Linnæa*, xxxii. 781.—Lapeyrousia manuleæflora, *Eckl. Top. Verz.* 31. *C. B. Spei.*

11. L. FABRICII, *Ker in Bot. Mag. sub* t. 1246.—Gladiolus Fabricii, *Thunb. Prodr.* 186.—Ovieda Fabricii, *Spreng. Syst.* i. 147.—Peyrousia Fabricii, *Sweet, Hort. Brit.* edit. 2, 499.—Meristostigma Fabricii, *Dietr. Synops.* i. 161.—Gladiolus anceps, *Linn. herb. ex parte.*—Diasia iridifolia, *Eckl. Top. Verz.* 31, *non DC.* *C. B. Spei.*

12. L. SILENOIDES, *Ker in Bot. Mag. sub* t. 1246.—Gladiolus silenoides, *Jacq. Ic.* t. 270.—Ovieda silenoides, *Spreng. Syst.* i. 147.—Meristostigma silenoides, *Dietr. Synops.* i. 161.—Peyrousia silenoides, *Sweet, Hort. Brit.* edit. 2, 499. *C. B. Spei.*

13. L. ANCEPS, *Ker in König & Sims, Ann.* i. 238; *Sweet, Brit. Flow. Gard.* t. 143.—Gladiolus anceps, *Linn. Suppl.* 94, *ex parte*; *Thunb. Diss. Glad.* No. 17, t. 2. fig. 3.—Ovieda anceps, *Spreng. Syst.* i. 147. Peyrousia anceps, *Sweet, Brit. Flow. Gard.* edit. 2, 499.—Meristostigma anceps, *Dietr. Synops.* i. 164.—Lapeyrousia compressa, *Pourret in Act. Tolos.* iii. t. 6.—Ixia Fabricii, *Delaroche Diss.* 18 (1766).—Ixia pyramidalis, *Lam. Ency.* iii. 334.—Witsenia pyramidalis, *Pers. Syn.* i. 42.—Gladiolus denticulatus, *Lam. Ill.* i. 118. *C. B. Spei.*

Var. L. ACULEATA, *Sweet, Hort. Brit.* 396.—Peyrousia aculeata, *Sweet, Brit. Flow. Gard.* ser. 2, t. 39.—Ovieda aculeata, *Klatt in Linnæa*, xxxii. 777.—Gladiolus anceps, *Linn. herb. ex parte.* *C. B. Spei.*

14. L. BAINESII, *Baker in Trimen's Journ.* 1876, 338. *Africa australis subtropicalis.*

Var. BREVIFLORA, *Baker.* *Transvaal.*

15. L. ODORATISSIMA, *Baker.*—Psilosiphon odoratissimus, *Welw. herb. Angola.*

16. L. FRAGRANS, *Baker.*—Psilosiphon fragrans, *Welw. herb.* *Angola.*

17. L. CYANESCENS, *Baker.*—Psilosiphon cyanescens, *Welw. herb. Angola.*

Species floribus mihi ignotis.

18. L. LITTORALIS, *Baker.* *Angola.*

55. WATSONIA, *Miller*.

Miller, (*Ic.* ii. 184, t. 276) *Dict.* edit. 6 (1771); *Ker, Gen. Irid.* 122; *Klatt in Linnæa*, xxxii. 735.—? Lomenia*, *Pourret in Act. Tolos.* iii. 13.—Neuberia, *Eckl. Verz. Top.* 37.—Micranthus (*Pers. Syn.* i. 46), *Eckl. Verz. Top.* 43.—Beilia, *Eckl. Verz. Top.* 43.—Gladioli *et* Antholyzæ sp. *auct. vet.*

Perianthium leviter irregulare, tubo supra ovarium producto curvato, deorsum filiformi, sursum cylindrico, limbi segmentis subæqualibus oblongis vel lanceolatis flore expanso patulis. *Stamina* 3 ad basin tubi partis dilatatæ unilateraliter inserta cum tubo arcuata, filamentis filiformibus ex tubo exsertis, antheris linearibus basi profunde sagittatis. *Ovarium* cylindricum triloculare, ovulis in loculo crebris; *stylus* filiformis cum tubo curvatus, stigmatibus tribus bifidis brevibus divaricatis. *Capsula* cylindrico-triquetra coriacea apice umbilicata tarde loculicide trivalvis, seminibus crebris oblongo-discoideis, testa atra membranacea. *Herbæ bulbosæ sæpissimæ capenses elatæ, bulbi tunicis reticulatis apice dense fibrosis, foliis ensiformibus vel linearibus, caulinis valde reductis, floribus copiosis sæpissime rubris spicato-paniculatis magnis vel raro parvis, spathæ unifloris valvis integris lanceolatis duris striatis brunneis interdum late membranaceo-marginatis.*

* WATSONIA, *Eckl.* *Elatæ, perianthii limbo quam tubus breviore.*

1. W. ALETROIDES, *Ker in Bot. Mag.* t. 533.—Antholyza aletroides, *Burm. Prodr. Cap.* 1.—Gladiolus aletroides, *Vahl, Enum.* ii. 96.—G. tubulosus, *Jacq. Ic.* t. 229.—Watsonia tubulosa, *Pers. Syn.* 42.—W. Jacquini, *Pers. Syn.* i. 42.—Antholyza Merianella, *Curt. in Bot. Mag.* t. 441, *non Linn.*—Gladiolus Merianus, *Thunb. Diss. Glad.* No. 12. *C. B. Spei.*

2. W. ANGUSTA, *Ker in König & Sims, Ann.* i. 230.—Gladiolus Merianus, var., *Jacq. Ic.* t. 231.—Antholyza fulgens, *Andr. Bot. Rep.* t. 192.—W. iridifolia, var. fulgens, *Ker in Bot. Mag.* t. 600.—W. fulgida, *Salisb. in Trans. Hort. Soc.* i. 323.—W. atrosanguinea, *Klatt in Linnæa*, xxxii. 738. *C. B. Spei* (*Java, inquilina*).

3. W. CYLINDRICA, *Baker in Trimen, Journ.* 1876, 336. *Madagascaria.*

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* *Lomenia borbonica*, Pourret, ex descrip. loc. cit., est planta borbonica ab speciebus nostris elatis *Watsoniæ* capensibus recedens stigmatibus 5 et perianthii tubo quam limbus duplo breviore.

4. W. Meriana, *Miller, Gard. Dict.* edit. vi. No. 1 (*Icon.* ii. 184, t. 276); *Ker in König & Sims, Ann.* i. 230.—Antholyza Meriana, *Linn. Sp. Plant.* 54; *Bot. Mag.* t. 418.—Gladiolus Merianus, *Jacq. Ic.* t. 230; *Red. Lil.* t. 11, *non Thunb.* *C. B. Spei.*

Var. W. coccinea, *Herb. MSS.*—Watsonia Meriana, var., *Ker in Bot. Mag.* t. 1194; *Trew, Ehret.* 11, t. 40. *C. B. Spei.*

Var. W. roseo-alba, *Ker in Bot. Mag.* t. 537.—Gladiolus roseo-albus, *Jacq. Hort. Schoen.* t. 13. *C. B. Spei.*

Var. W. iridifolia, *Ker in Bot. Mag.* sub t. 600, ex parte.—Gladiolus iridifolius, *Jacq. Ic.* t. 234 (*non* 235).

Var. W. dubia, *Eckl. Verz. Top.* 36. *C. B. Spei.*

5. W. strictiflora, *Ker in Bot. Mag.* t. 1406. *C. B. Spei.*

6. W. densiflora, *Baker in Trimen, Journ.* 1876, 336. *C. B. Spei in ditione orientali, Natalia.*

7. W. humilis, *Miller, Gard. Dict.* edit. vi. No. 2 (*Icon.* ii. 198, t. 297 fig. 2); *Bot. Mag.* t. 631 et t. 1193.—Antholyza caryophyllacea, *Houtt. Handl.* xii. t. 79. fig. 3.—Gladiolus laccatus, *Jacq. Ic.* t. 232; *Red. Lil.* t. 343.—Watsonia laccata, *Ker in Bot. Mag.* sub t. 631.—Neuberia laccata, *Eckl. in Unio, Itin. Exsic.* No. 560.—Gladiolus marginatus, *Thunb.*, ex parte.—G. strictiflorus, *Red. Lil.* t. 399.—Watsonia tubulosa, *herb. Drège,* ex parte. *C. B. Spei.*

** Neuberia, *Eckl.* *Elatæ, limbi segmentis tubo æquilongis vel paulo brevioribus.*

8. W. rosea, *Ker in König & Sims, Ann.* i. 230; *Bot. Mag.* t. 1072.—Gladiolus pyramidatus, *Andr. Bot. Rep.* t. 335.—G. iridifolius, var., *Jacq. Ic.* t. 235.—Neuberia rosea, *Eckl. Verz. Top.* 37.—Gladiolus glumaceus, *Thunb. Prodr.* 186. *C. B. Spei.*

9. W. brevifolia, *Ker in Bot. Mag.* t. 601.—W. hyacinthoides, *Pers. Syn.* i. 43.—Antholyza spicata, *Andr. Bot. Rep.* t. 56.—Gladiolus testaceus, *Vahl, Enum.* ii. 105. *C. B. Spei.*

10. W. marginata, *Ker in Bot. Mag.* t. 608.—Gladiolus marginatus, *Linn. Suppl.* 95; *Thunb. Diss. Glad.* No. 20, ex parte.—Ixia marginata, *Soland. in Ait. Hort. Kew.* i. 59.—Neuberia marginata, *Eckl. Top. Verz.* 37.—Ixia Sceptrum, *Hort.* *C. B. Spei.*

Var. minor, *Ker in Bot. Mag.* t. 1530. *C. B. Spei.*

*** Beilia, *Eckl.* *Humiles, floribus magnitudine mediocribus.*

11. W. punctata, *Ker in König & Sims, Ann.* i. 229.—Gladiolus punctatus. *Roem. & Schult. Syst. Veg.* i. 425.—G. bracteolatus, *Lam.*

Ency. ii. 725.—Watsonia rubens, *Ker in Bot. Mag.* sub t. 1072.—Gladiolus rubens, *Vahl, Enum.* ii. 98.—Ixia punctata, *Andr. Bot. Rep.* t. 177.—Beilia triticea *et* spicata, *Eckl. Top. Verz.* 43, *excl. syn. C. B. Spei.*

Var. ZEYHERI, *Baker. C. B. Spei.*

Var. W. FILIFOLIA, *E. Meyer in herb. Drège. C. B. Spei.*

**** MICRANTHUS, *Pers. Humiles, floribus minutis densissimis, spathæ valvis margine late membranaceis albis.*

12. W. SPICATA, *Ker in König & Sims, Ann.* i. 229.—Gladiolus spicatus, *Linn. Sp. Plant.* i. 53, *teste Ker, non Linn. herb.*—G. tubulosus, *Burm. Prodr.* 2.—G. fistulosus, *Jacq. Hort. Schoen.* t. 6.—Ixia fistulosa, *Ker in Bot. Mag.* t. 523.—Micranthus fistulosus, *Eckl. Top. Verz.* 44.—Ixia spicata, *Soland.; Willd. Sp. Plant.* i. 200.—I. cepacea, *Red. Lil.* t. 96.—Gladiolus alopecuroides, *herb. Linn.* ex parte.—I. alopecuroidea, *Linn. Suppl.* 92.—Gladiolus alopecuroideus, *Pers. Syn.* i. 46. *C. B. Spei.*

13. W. PLANTAGINEA, *Ker in Bot. Mag.* t. 553.—Ixia plantaginea, *Ait. Hort. Kew.* i. 59; *Red. Lil.* t. 198.—Gladiolus plantagineus, *Pers. Syn.* i. 46.—Ixia triticea, *Burm. Prodr.* 1.—Gladiolus triticeus, *Thunb. Fl. Cap.* i. 194.—Phalangium spicatum, *Houtt. Handl.* xii. t. 80. fig. 2.—Gladiolus alopecuroides, *Linn. Sp. Plant.* 54, ex parte. Micranthus plantagineus *et* alopecuroideus, *Eckl. Verz. Top.* 43.—W. compacta, *Lodd. Bot. Cab.* t. 1577. *C. B. Spei.*

Var. JUNCEA, *Baker. C. B. Spei.*

56. ACIDANTHERA, *Hochst.*

Hochst. in Regensb. Flora, 1844, 25.—Sphærospora, *Klatt in Linnæa*, xxxii. 275, *non Sweet.*—Solenanthus, *Steud. MSS. teste Klatt.*—Gladioli *et* Ixiæ sp. *auct. vet.*

Perianthium leviter irregulare, tubo supra ovarium longe producto cylindrico leviter curvato medio haud dilatato, limbi segmentis subæqualibus oblongis vel oblanceolatis, inferioribus flore expanso magis patulis fauce sæpe maculatis. *Stamina* 3 ad faucem tubi unilateraliter inserta arcuata contigua, filamentis filiformibus, antheris angustis basifixis, interdum connectivo producto mucronatis. *Ovarium* oblongum triloculare, ovulis in loculo crebris; *stylus* filiformis ex tubo protrusus, stigmatibus tribus parvis integris oblanceolatis. *Capsula* parva oblonga membranacea loculicide trivalvis, seminibus minutis globosis, testa membranacea brunnea, albumine corneo. *Herbæ* *bulbosæ capenses et africanæ tropicales bulbi tunicis membranaceis vel fibroso-reticulatis, foliis paucis superpositis angustis, caulibus teretibus sæpissime simplicibus, floribus paucis laxe spicatis, spathæ unifloræ valvis magnis lanceolatis acutis viridibus integris, interioribus minoribus inclusis, floribus magnitudine mediocribus sæpissime suberectis tubo longe producto. A* Montbretiæ *speciebus paucis spathæ valvis magnis lanceolatis viridibus recedit perianthii tubo ad faucem cylindrico, segmentis magis æqualibus.*

* *Perianthii tubus ex spatha longe exsertus.*

1. A. UNICOLOR, *Hochst. in Schimp. Pl. Abyss.* No. 2304.—Tritonia Schimperi, *Aschers. & Klatt in Linnæa*, xxxiv. 697. *Abyssinia.*

2. A. BICOLOR, *Hochst. in Regensb. Flora*, 1844, 25; *Bouche & Wittm. in Berlin. Monat.* xix. 12, t. 1.—Ixia Quartiniana, *A. Rich. Fl. Abyss.* ii. 310.—Sphærospora gigantea, *Klatt in Linnæa*, xxxiv. 699. *Abyssinia.*

3. A. ÆQUINOCTIALIS, *Baker.*—Gladiolus æquinoctialis, *Herb. in Bot. Reg.* 1842, *Misc.* 97. *Sierra Leone.*

4. A. BRACHYSTACHYS, *Baker in Trimen, Journ.* 1876, 338. *C. B. Spei.*

5. A. GRAMINIFOLIA, *Baker in Trimen, Journ.* 1876, 338. *C. B. Spei.*

6. A. PLATYPETALA, *Baker in Trimen, Journ.* 1876, 339. *Natal.*

** *Perianthii tubus ex spatha breviter exsertus.*

7. A. HUTTONI, *Baker in Trimen, Journ.* 1876, 339. *C. B. Spei.*

8. A. FLEXUOSA, *Baker in Berlin Monat.* xix. 15.—Gladiolus flexuosus, *Thunb. Diss. Glad.* No. 8, t. 1. fig. 1.—Sphærospora flexuosa, *Klatt in Linnæa*, xxxii. 726. *C. B. Spei.*

9. A. TUBULOSA, *Baker.*—Ixia tubulosa, *Houtt. Handl.* xii. t. 78. fig. 2.—Gladiolus exscapus, *Thunb. Flor. Cap.* i. 175.—Sphærospora exscapa, *Klatt in Linnæa*, xxxii. 725.—Acidanthera exscapa, *Baker in Berlin. Monat.* xix. 15.—Gladiolus longiflorus, *Linn. herb.* ex parte.—Freesia costata, *Ecklon in herb. Zeyher.* *C. B. Spei.*

*** *Perianthii tubus in spatha inclusus.*

10. A. BREVICOLLIS *Baker in Trimen, Journ.* 1876. 339. *C. B. Spei.*

57. HOMOGLOSSUM, *Salisb.*

Salisb. in Trans. Hort. Soc. i. 325.—Gladioli *et* Antholyzæ sp. *auct.*

Perianthium leviter irregulare, tubo supra ovarium longe producto curvato deorsum filiformi sursum cylindrico, segmentis brevibus subæqualibus vel inferioribus minoribus flore expanso magis patulis. *Stamina* 3 ad basin tubi partis cylindricæ unilateraliter inserta, filamentis filiformibus secundis contiguis arcuatis, antheris linearibus basi profunde sagittatis. *Ovarium* oblongum triloculare, ovulis in loculo crebris; *stylus* filiformis, cum staminibus arcuatus, stigmatibus tribus brevibus integris apice cuneatis. *Capsulam* maturam non vidi. *Herbæ elatæ bulbosæ capenses, bulbi tunicis in segmenta linearia sectis, foliis angustissimis duris segregatis superpositis, floribus rubris magnitudine mediocribus dense vel laxe simpliciter spicatis, spathæ unifloris valvis lanceolatis integris brunneis vel viridibus.*

* *Laxiflora.*

1. H. REVOLUTUM, *Baker.*—Antholyza revoluta, *Burm. Prodr.* 1.—Watsonia revoluta, *Pers. Syn.* i. 42.—Gladiolus præcox, *Andr. Bot. Rep.* t. 38.—Homoglossum præcox, *Salisb. in Trans. Hort. Soc.* i. 325.—Watsonia præcox, *Pers. Syn.* i. 42.—Gladiolus Watsonius, *Thunb. Diss. Glad.* No. 10; *Jacq. Ic.* t. 233; *Bot. Mag.* t. 450; *Red. Lil.* t. 369.—G. recurvus, *Houtt. Handl.* xii. 59, t. 79. fig. 1. *C. B. Spei.*

Var. GAWLERI.—G. Watsonius, var., *Ker in Bot. Mag.* t. 569. *C. B. Spei.*

2. H. MERIANELLA, *Baker.*—Antholyza Merianella, *Linn. Syst. Veg.* xiv. 87, *non Bot. Mag.* t. 441.—Gladiolus Merianellus, *Thunb. Diss.* No. 11.—G. hirsutus, var. tenuiflorus, *Ker in Bot. Mag. sub* t. 574. —G. hirsutus, var. Merianellus, *Ker in Bot. Mag. sub* t. 727.—Watsonia humilis, *Pers. Syn.* i. 42, *non Miller. C. B. Spei.*

** *Densiflorum.*

3. H. LUCIDOR, *Baker.*—Antholyza lucidor, *Linn. Suppl.* 96.—Watsonia lucens, *Pers. Syn.* i. 42.—W. lucidior, *Eckl. Verz. Topog.* 36. *C. B. Spei.*

58. TRITONIA, *Ker.*

Ker in Bot. Mag. t. 581 (1802); *König & Sims, Ann.* i. 227, ex parte; *Gen. Irid.* 113, ex parte; *Klatt in Linnæa,* xxxii. 755, excl. sp.—Belemcanda, *Moench, Meth.* 529, ex parte.—Dichone, "*Laws.*," *Salisb. in Trans. Hort. Soc.* i. 320.—Crocosma, *Planch. in Flore des Serres*, t. 702.—Agretta, *Eckl. Verz. Top.* 23.—Waitzia, *Reich. Conspect.* 60, ex parte.

Perianthium subregulare late infundibulare, tubo supra ovarium brevi dimidio superiore obconico vel ad faucem cylindrico, segmentis subæqualibus obtusis obovato- vel oblongo-spathulatis diu ascendentibus imbricatis. *Stamina* ad faucem tubi inserta secunda vel subsecunda, filamentis filiformibus, antheris contiguis vel divaricatis linearibus vel oblongis. *Ovarium* oblongum triloculare, ovulis in loculo crebris; *stylus* filiformis, ex tubo protrusus, stigmatibus tribus integris oblanceolatis falcatis. *Capsula* parva oblonga trigibba membranacea loculicide trivalvis, seminibus minutis globosis, testa membranacea atra, albumine firmo. *Herbæ graciles bulbosæ capenses, bulbi tunicis fibroso-reticulatis, foliis multis basalibus linearibus flabellatis, caulibus teretibus simplicibus, vel furcatis, floribus laxe spicatis, spathæ unifloris valvis oblongis brunneis scariosis, exteriore latiore tricuspidata, interiore emarginata, perianthii limbo parvo vel magnitudine mediocri rubello, croceo vel albido, segmentis alternis vel omnibus sæpe fauce maculatis. Genus ad* Ixieas *arcte accedens;* Eutritonia *a* Morphixia *et* Dichone *ab* Ixia *præsertim recedunt antheris plus minusve secundis.*

Sect. I. EUTRITONIA. *Grandifloræ, perianthii tubo apice obconico.*

1. T. CROCATA, *Ker in König & Sims, Ann.* i. 227.—Ixia crocata, *Linn. Sp. Plant.* i. 52; *Linn. Herb.*!; *Linn. fil. Pl. Rar. Hort. Ups.* t. 7; *Bot. Mag.* t. 184.—Gladiolus crocatus, *Wendl. Obs. Bot.* t. 4.—Ixia iridifolia, *Delaroche, Diss.* 24; *Miller, Ic.* t. 239. fig. 2. *C. B. Spei.*

Var. T. PURPUREA, *Ker in Bot. Mag. sub* t. 1275.—Ixia purpurea, *Lam. Ency.* iii. 341. *C. B. Spei.*

Var. T. SANGUINEA, *Eckl. Verz. Top.* 29. *C. B. Spei.*

Var. T. COCCINEA, *Eckl. Verz. Top.* 29. *C. B. Spei.*

Var. T. AURANTIACA, *Eckl. Verz. Top.* 29. *C. B. Spei.*

2. T. MINIATA, *Ker in Bot. Mag.* t. 609.—Ixia miniata, *Jacq. Hort. Schoen.* t. 24.—I. crocata, *Red. Lil.* t. 335. *C. B. Spei.*

3. T. DEUSTA, *Ker in Bot. Mag.* t. 622.—Ixia deusta, *Soland. in Hort. Kew.* i. 60.—I. miniata, *Red. Lil.* t. 89.—I. gibba, *Salisb. Prodr.* 38.

—I. crocata, var. nigro-maculata, *Andr. Bot. Rep.* t. 134. *C. B. Spei.*

4. T. HYALINA, *Baker.*—Ixia hyalina, *Linn. Suppl.* 91.—I. fenestrata, *Jacq. Ic.* t. 289.—Tritonia fenestrata, *Ker in Bot. Mag.* t. 704. *C. B. Spei.*

5. T. SQUALIDA, *Ker in Bot. Mag.* t. 581.—Ixia squalida, *Soland. in Ait. Hort. Kew.* i 61, ex parte.—I. hyalina, *Red. Lil.* t. 87, *non Linn.*—I. similis, *Salisb. Prodr.* 38.—I. fenestrata, var., *Jacq. Frag.* t. 34. fig. 2.—I. lancea, *Thunb. Diss. Ixia,* No. 21, *non Jacq. C. B. Spei.*

6. T. BOLUSII, *Baker in Trimen, Journ.* 1876, 337. *C. B. Spei.*

Sect. II. DICHONE. *Parviflorœ, perianthii tubo ad faucem cylindrico, genitalibus brevibus.*

7. T. UNDULATA, *Baker.*—Ixia undulata, *Burm. Fl. Cap.* 1 (1768).—I. crispa, *Linn. Suppl.* 91 (1781); *Thunb. Diss. Ixia,* No. 8, t. 2. fig. 3; *Ker in Bot. Mag.* t. 599; *Red. Lil.* t. 433.—Dichone crispa, *Laws. Cat.* 6, *teste Salisbury.*—Agretta crispa, *Eckl. Verz. Top.* 24. *C. B. Spei.*

8. T. SCILLARIS, *Baker.*—Ixia scillaris, *Linn. Sp. Plant.* i. 52; *Houtt. Handl.* xi. t. 77. fig. 2; *Red. Lil.* t. 127.—I. pentandra, *Linn. Suppl.* 92.—Agretta pentandra, *Eckl. Verz. Top.* 29.—Hesperantha pentandra, *herb. Drège.*—Ixia reflexa, *Andr. Bot. Rep.* t. 14 (I. rotata, *Andr. Recens.*).—I. retusa, *Salisb. Prodr.* 25.—I. polystachya, var. incarnata, *Andr. Bot. Rep.* t. 128.—I. polystachya, *Jacq. Ic.* t. 275; *Ker in Bot. Mag.* t. 629, *non Linn. C. B. Spei.*

Sect. III. CROCOSMA. *Grandiflora, perianthii tubo ad faucem cylindrico, genitalibus ex tubo longe exsertis.*

9. T. AUREA, *Pappe, MSS.*; *Hook. in Bot. Mag.* t. 4335.—Crocosma aurea, *Planch. in Flore des Serres,* t. 702. *Natalia, Kaffraria.*

59. FREESIA, *Klatt.*

Klatt in Linnæa, xxxiv. 672 (*non Ecklon, Verz. Top.* 30).—Gladioli sp., *Jacq. &c.*—Tritoniæ sp., *Gawl. &c.*

Perianthium irregulare, tubo supra ovarium longe producto, dimidio inferiore cylindrico, dimidio superiore late infundibulari, segmentis brevibus oblongis inæqualibus diu ascendentibus. *Stamina* 3 ad medium tubi unilateraliter inserta secunda contigua, filamentis filiformibus, antheris linearibus inclusis basi sagittatis. *Ovarium* triloculare, ovulis in loculo crebris;

stylus filiformis staminibus æquilongus, apice ramis 6 stigmatosis brevibus subulatis præditus. *Capsula* parva oblonga vel globosa trigibba membranacea loculicide trivalvis, seminibus minutis globosis. *Herbæ bulbosæ capenses, bulbi tunicis laxe fibroso-reticulatis, foliis congestis graminoideis flabellatis, caulibus gracilibus teretibus profunde furcatis, floribus in spicas secundas dispositis, spathæ unifloris valvis brevibus oblongis apice sphacelatis truncatis 2–3-dentatis, floribus flavis suaveolentibus. Habitus omnino* Montbretiæ, *sed recedit stigmatibus furcatis.*

1. F. REFRACTA, *Klatt in Linnæa,* xxxiv. 673.—Gladiolus refractus, *Jacq. Ic.* t. 241; *Red. Lil.* 419.—Tritonia refracta, *Ker in König & Sims, Ann.* i. 227; *Bot. Reg.* 135.—Gladiolus resupinatus, *Pers. Syn.* i. 45.—G. Sparrmanni, *Thunb. Fl. Cap.* edit. 2, 49.—Tritonia odorata, *Lodd. Bot. Cab.* t. 1820.—Freesia odorata, *Klatt in Linnæa,* xxxiv. 672.—Gladiolus xanthospilus, *DC. in Red. Lil.* t. 124.—Freesia xanthospila, *Klatt, loc. cit.*—Sparaxis Joubertii, *Eckl. MSS. C. B. Spei.*

2. F. LEICHTLINII, *Klatt in Regel, Gartenfl.* t. 808. *C. B. Spei.*

60. BABIANA, *Ker.*

Ker in Bot. Mag. t. 539; *Gen. Irid.* 140; *Klatt in Linnæa,* xxxii. 765.—Acaste, *Salisb. in Trans. Hort. Soc.* i. 322.—Gladioli, Ixiæ, *et* Antholyzæ sp. *auct. vet.*

Perianthium irregulare vel subregulare, tubo supra ovarium producto subrecto elongato vel brevi gracili apice infundibulari, limbi segmentis oblongo- vel oblanceolato-spathulatis subæqualibus vel supremo maximo cochleato, reliquis minoribus. *Stamina* prope faucem tubi inserta secunda arcuata, filamentis filiformibus brevibus vel elongatis, antheris linearibus basifixis. ***Ovarium*** triloculare, ovulis in loculo crebris; ***stylus*** filiformis cum staminibus arcuatus ex tubo protrusus, stigmatibus tribus integris apice cuneatis. ***Capsula*** globosa trigibba coriacea loculicide trivalvis, seminibus parvis turgidis, testa crassa carnosa brunnea, albumine corneo. *Herbæ bulbosæ capenses pilosæ, bulbi tunicis multis brunneis membranaceis vel fibrosis secus collum productis, foliis basalibus pluribus linearibus vel cuneatis oblique petiolatis plicatis nervis validis percursis, caulinis paucis reductis, floribus rubris purpureis luteis vel albidis spicatis, spathæ unifloris valvis dense pilosis lanceolatis, interiore sæpe bifida.*

Subgenus EUBABIANA. *Perianthii limbus irregularis.*

* *Tubus ex spatha protrusus.*

1. B. SAMBUCINA, *Ker in König & Sims, Ann.* i. 234; *Bot. Mag.* t. 1019.—Gladiolus sambucinus, *Jacq. Hort. Schoen.* t. 15. *C. B. Spei.*

2. B. SPATHACEA, *Ker in König & Sims, Ann.* i. 234; *Bot. Mag.* t. 638.—Gladiolus spathaceus, *Linn. Suppl.* 96. *C. B. Spei.*

3. B. HYPOGÆA, *Burchell, Travels,* ii. 589. *C. B. Spei.*

4. B. BAINESII, *Baker in Trimen, Journ.* 1876, 335. *C. B. Spei in ditione Transvaal.*

5. B. DREGEI, *Baker in Trimen, Journ.* 1876, 336. *C. B. Spei.*

6. B. DISTICHA, *Ker in König & Sims, Ann.* i. 234; *Bot. Mag.* t. 626. —Gladiolus plicatus, *Jacq. Ic.* t. 237, *vix Linn. C. B. Spei.*

7. B. TUBATA, *Sweet, Brit. Flow. Gard.* edit. ii. 500.—Gladiolus tubatus, *Jacq. Ic.* t. 264.—G. longiflorus, *Andr. Bot. Rep.* t. 5.—Babiana tubiflora, var. tubata, *Ker, Bot. Mag.* t. 680.—B. stricta, var. tubiflora, *Ker, Gen. Irid.* 151. *C. B. Spei.*

8. B. TUBIFLORA, *Ker in König & Sims, Ann.* i. 233; *Bot. Mag.* t. 847 et 1019.—Gladiolus tubiflorus, *Linn. Suppl.* 96; *Thunb. Diss. Glad.* No. 23, t. 2. fig. 2; *Jacq. Ic.* t. 266.—G. angustifolius, *Lam. Ill.* i. 119.—G. inclinatus, *Red. Lil.* t. 44.—? Babiana tubulosa, *Ker, Gen. Irid.* 154 (Ixia tubulosa, *Burm. Prodr.* 1). *C. B. Spei.*

9. B. THUNBERGII, *Ker in König & Sims, Ann.* i. 233.—Antholyza plicata, *Linn. Suppl.* 96. *C. B. Spei.*

** *Tubus ex spatha vix protrusus.*

10. B. SPRENGELII, *Baker.*—B. pygmæa, *Spreng. in Pl. Zeyher. C. B. Spei.*

11. B. PYGMÆA, *Baker.*—Ixia pygmæa, *Burm. Prodr. Cap.* 1 (*Plukenet, Phyt.* 424, fig. 8.)—Babiana nana, *Spreng. Syst. Veg.* i. 156.—Gladiolus nanus, *Andr. Bot. Rep.* t. 137. *C. B. Spei.*

12. B. FLABELLIFOLIA, *Harv. MSS.*; *Klatt in Linnæa,* xxxv. 380. *Namaqualand.*

13. B. CUNEIFOLIA, *Baker in Trimen, Journ.* 1876, 335. *C. B. Spei.*

14. B. MUCRONATA, *Ker in König & Sims, Ann.* i. 233.—Gladiolus mucronatus, *Jacq. Ic.* t. 253. *C. B. Spei.*

15. B. PLICATA, *Ker in Bot. Mag.* t. 576.—Gladiolus plicatus, *Thunb. Diss.* No. 24, ex parte.—G. fragrans, *Jacq. Hort. Schoen.* t. 14.—B.

reflexa, *Ker, Gen. Irid.* 154.—Gladiolus reflexus, *Licht. in Roem. & Schultes, Syst. Veg.* i. 439.—B. cærulescens, *Eckl. Verz. Top.* 32. *C. B. Spei.*

16. B. FIMBRIATA, *Baker.*—Antholyza fimbriata, *Klatt in Linnæa,* xxxv. 299. *C. B. Spei.*

17. B. RINGENS, *Ker in König & Sims, Ann.* i. 233; *Lodd. Bot. Cab.* t. 1006.—Antholyza ringens, *Linn. Sp. Plant.* i. 54 (*Commelin. Hort. Amstel.* i. t. 41). *C. B. Spei.*

Subgenus ACASTE (*Salisb.*). *Perianthii limbus subregularis.*

18. B. STRICTA, *Ker in Bot. Mag.* t. 621 et 637.—Gladiolus strictus, *Soland. in Ait. Hort. Kew.* i. 63.—G. plicatus, *Linn. Sp. Plant.* i. 53, ex parte.—Ixia plicata, *Linn. Amœn. Acad.* iv. 300, ex parte.—Gladiolus nervosus, *Lam. Encyc.* ii. 722.—G. mucronatus, *Red. Lil.* t. 142. *C. B. Spei.*

Var. B. VILLOSA, *Ker in Bot. Mag.* t. 583.—Ixia villosa, *Soland. in Ait. Hort. Kew.* i. 58.—I. punicea, *Jacq. Ic.* t. 287.—I. flabelliformis, *Salisb. Prod.* 37.—Gladiolus villosus, *Vahl, Enum.* ii. 145.—G. puniceus, *Vahl, Enum.* ii. 144. *C. B. Spei.*

Var. B. RUBRO-CYANEA, *Ker in König & Sims, Ann.* i. 233.—Ixia rubro-cyanea, *Jacq. Ic.* t. 285; *Curt. Bot. Mag.* t. 410.—I. cyanea, *Pers. Syn.* i. 48.—Gladiolus rubrocyaneus, *Vahl, Enum.* ii. 98.—B. rubro-cærulea, *Reich. Exot.* t. 30. *C. B. Spei.*

Var. B. OBTUSIFOLIA, *Ker in König & Sims, Ann.* i. 233.—Ixia villosa, *Jacq. Ic.* t. 284, *non Soland.*—Gladiolus villosulus, *Roem. & Schult. Syst. Veg.* i. 444. *C. B. Spei.*

Var. B. PURPUREA, *Ker in Bot. Mag. sub* t. 1019.—Ixia purpurea, *Jacq. Ic.* t. 286 et 286 *a.*—B. stricta, var. purpurea, *Ker in Bot. Mag.* t. 1052. *C. B. Spei.*

Var. B. SULPHUREA, *Ker in Bot. Mag. sub* t. 1019; *König & Sims, Ann.* i. 239; *Bot. Mag.* t. 1053.—Gladiolus sulphureus, *Jacq. Ic.* t. 239.—G. plicatus, *Andr. Bot. Rep.* t. 268. *C. B. Spei.*

Var. B. ANGUSTIFOLIA, *Sweet, Brit. Flow. Gard.* edit. ii. 499.—B. stricta, var., *Ker in Bot. Mag.* t. 637.—Ixia villosa, var., *Jacq. Mag.* 22, t. 14. fig. 3. *C. B. Spei.*

Species dubia, spathæ valvis brevibus laceratis.

19. B. SECUNDA, *Ker, Gen. Irid.* 154.—Gladiolus secundus, *Thunb. Prodr.* ii. 186; *Act. Soc. Hafn.* ii. t. 4. *C. B. Spei.*

61. MELASPHÆRULA, *Ker.*

Ker in Bot. Mag. t. 615 (Jan. 1803); *Gen. Irid.* 157.—Diasia, *DC. in Bull. Soc. Phil.* 1803, 251 (1804); *Klatt in Linnæa,* xxxii. 746.—Phalangium, *Burm. Prodr. Cap.* 3, *non Tourn.*—Gladiolus, § Aglæa, *Pers. Syn.* i. 46.—Aglæa, *Ecklon, Verz. Top.* 44.

Perianthium irregulare, tubo supra ovarium brevissimo campanulato, limbo bilabiato, segmentis tribus superioribus oblongis acuminatis, tribus inferioribus longioribus angustioribus. *Stamina* 3 ad basin tubi unilateraliter inserta secunda arcuata limbo triplo breviora, filamentis filiformibus parallelis, antheris parvis oblongis. *Ovarium* depresso-globosum trilobatum, ovulis in loculo paucis; *stylus* filiformis cum staminibus arcuatus, stigmatibus tribus integris falcatis apice cuneatis. *Capsula* parva duplo latior quam longa profunde acute triquetra membranacea loculicide trivalvis, seminibus in loculo paucis minutis globosis, testa nitida punctata atro-castanea, albumine duro. *Herba bulbosa capensis, bulbi parvi globosi tunicis membranaceis brunneis, foliis linearibus membranaceis, spicis copiose paniculatis rachibus capillaribus flexuosis, floribus parvis luteo-viridibus segmentis purpureo carinatis, spathæ unifloris valvis oblongis integris acutis margine membranaceis.*

1. M. GRAMINEA, *Ker in Bot. Mag.* t. 615.—Gladiolus gramineus, *Linn. Suppl.* 95, *excl. syn.*; *Jacq. Ic.* t. 236; *Andr. Bot. Rep.* t. 62.—G. ramosus, *Linn. Sp. Plant.* i. 53.—Phalangium ramosum, *Burm. Prodr. Cap.* 3, *excl. syn.*—Aglæa graminea, *Eckl. Verz. Top.* 44.—Diasia iridifolia, *DC. in Red. Lil.* t. 54.—D. graminifolia, *DC. in Red. Lil.* t. 163.—Melasphærula parviflora, *Lodd. Bot. Cab.* t. 1444.—M. intermedia *et* iridifolia, *Sweet, Hort. Brit.* edit. ii. 502.—Asphodelus foliis planis caule ramoso floribus sparsis, *Miller, Ic.* 38, t. 56. *C. B. Spei.*

62. MONTBRETIA, *DC.*

DC. in Bull. Philom. 1803, 251; *Klatt in Linnæa,* xxxii. 752 (*extens.*).—Houttuynia, *Houtt. Handl.* xii. 448, t. 85, *non Thunb.*—Tritonia, *Ker in König & Sims, Ann.* i. 227, ex parte.—Freesia, *Ecklon, Verz. Top.* 30, *non Klatt.*—Waitzia, *Reich. Conspect.* 60, ex parte.

Perianthium irregulare, tubo supra ovarium longe vel breviter producto deorsum cylindrico sursum oblique late infundibulari, segmentis brevibus oblongis inæqualibus, superiore majore, tribus inferioribus minoribus basi maculatis vel interdum callo producto instructis. *Stamina* ad basin tubi partis infundibularis unilateraliter inserta secunda arcuata contigua, filamentis filiformibus, antheris linearibus basifixis. *Ovarium* triloculare, ovulis in loculo crebris; *stylus* filiformis cum staminibus arcuatus, ramis stigmatosis tribus oblanceolatis integris falcatis. *Capsula* parva oblonga trigibba membranacea loculicide trivalvis, seminibus minutis globosis, testa brunnea membranacea, albumine corneo. *Herbæ bulbosæ capenses (species unica africana tropicalis) bulbi tunicis membranaceis vel fibroso-reticulatis, foliis congestis linearibus graminoideis flabellatis, floribus spicatis, spathæ valvis sæpe parvis oblongis apice sphacelatis dentatis, interdum majoribus integris lanceolatis, perianthii limbo pallido vel rubello.*

* HOUTTUYNIA. *Spathæ valvæ lanceolatæ acutæ integræ.*

1. M. CAPENSIS, *Baker.*—Houttuynia capensis, *Houtt. Handl.* xii. 448, tab. 85. fig. 3.—Tritonia capensis, *Ker in König & Sims, Ann.* i. 228; *Bot. Mag.* tab. 618, 1531.—Gladiolus roseus, *Jacq. Ic.* t. 261.—Tritonia rosea, *Dry. in Hort. Kew.* edit. ii. 191.—Gladiolus ixioides, *Thunb. Fl. Cap.* i. 208. *C. B. Spei.*

2. M. PAUCIFLORA, *Baker in Trimen, Journ.* 1876, 336. *C. B. Spei.*

** EUMONTBRETIA. *Spathæ valvæ oblongæ apice sphacellatæ dentatæ.*

† *Longicolles.*

3. M. LACERATA, *Baker.*—Gladiolus laceratus, *Burm. Prodr. Cap.* 2. —Gladiolus crispus, *Linn. Suppl.* 94; *Thunb. Diss. Glad.* No. 7, tab. 1. fig. 2; *Jac. Ic.* t. 267; *Andr. Bot. Rep.* t. 142.—Tritonia crispa, *Ker in König & Sims, Ann.* i. 228; *Bot. Mag.* t. 678.—Freesia crispa, *Eckl. Verz. Top.* 30. *C. B. Spei.*

Var. PECTINATA, *Baker.*—Gladiolus pectinatus, *Soland. in Herb. Banks.* —Ixia pectinata, *Vahl, Enum.* ii. 62.—Tritonia pectinata, *Ker in Bot. Mag.* sub t. 1275. *C. B. Spei.*

4. M. STRIATA, *Baker.*—Gladiolus striatus, *Soland. in Herb. Banks. C. B. Spei.*

5. M. PALLIDA, *Baker.*—Tritonia pallida, *Ker in Bot. Mag.* sub t. 1275. —Gladiolus longiflorus, *Jacq. Ic.* t. 262, *non Linn. C. B. Spei.*

6. M. VIRIDIS, *Baker.*—Gladiolus viridis, *Soland. in Ait. Hort. Kew.* iii. 481.—Tritonia viridis, *Ker in Bot. Mag.* t. 1275. *C. B. Spei.*

†† *Brevicolles.*

7. M. SECURIGERA, *DC. in Red. Lil.* t. 53.—Gladiolus securiger, *Ait. Hort. Kew.* i. 65; *Bot. Mag.* t. 383.—Ixia gladiolaris, *Lam. Encyc.* iii. 341.—Tritonia securigera, *Ker in König & Sims, Ann.* i. 228. *C. B. Spei.*

8. M. FLAVA, *Klatt in Linnæa,* xxxii. 753.—Gladiolus flavus, *Ait. Hort. Kew.* i. 65.—Tritonia flava, *Ker in König & Sims, Ann.* i. 228; *Bot. Reg.* t. 747.—Gladiolus securiger, var. flavus, *Pers. Syn.* i. 45.—Ixia flabellularis, *Vahl, Enum.* ii. 67. *C. B. Spei.*

9. M. LINEATA, *Baker.*—Gladiolus lineatus, *Salisb. Prod.* 40; *Bot. Mag.* t. 487; *Red. Lil.* t. 55 et 400.—Tritonia lineata, *Ker in König & Sims, Ann.* i. 228.—Gladiolus venosus, *Willd. Enum.* i. 58.—Ixia squalida, *Thunb. Fl. Cap.* i. 224, ex parte.—I. reticulata, *Thunb. Fl. Cap.* edit. ii. 60.—I. Thunbergii, *Roem. & Schult. Syst. Veg.* i. 391. *C. B. Spei.*

10. M. ROSEA, *Baker.*—Tritonia rosea, *Klatt in Linnæa,* xxxii. 760. *C. B. Spei.*

11. M. DUBIA, *Baker.*—Tritonia dubia, *Ecklon, MSS.*; *Klatt in Linnæa,* xxxii. 761. *C. B. Spei.*

12. M. STRICTIFOLIA, *Klatt in Linnæa,* xxxii. 753. *C. B. Spei.*

13. M. LAXIFOLIA, *Klatt in Linnæa,* xxxii. 754; *Baker in Trans. Linn. Soc.* xxix. 155, t. 101 A. *C. B. Spei, Africa æquatorialis orientalis.*

14. M. KAMISBERGENSIS, *Baker.*—Tritonia kamisbergensis, *Klatt in Linnæa,* xxxii. 760. *C. B. Spei.*

63. SYNNOTTIA, *Sweet.*

Sweet, Brit. Flow. Gard. t. 150; *Klatt in Linnæa,* xxxii. 749.—Sparaxidis sp., *Ker.*—Gladioli sp., *Thunb. & Jacq.*

Perianthium irregulare, tubo supra ovarium longe producto, dimidio inferiore gracili cylindrico, medio geniculato, dimidio superiore oblique late infundibulari, segmentis oblongis inæqualibus, superiore majore, tribus inferioribus minoribus flore expanso falcatis. *Stamina* ad medium tubi inserta secunda contigua arcuata, filamentis filiformibus, antheris linearibus basi sagittatis. *Ovarium* oblongum triloculare, ovulis in loculo crebris; *stylus* filiformis staminibus æquilongus, stigmatibus tribus oblanceolatis integris falcatis. *Capsula* parva oblonga trigibba membranacea loculicide trivalvis, seminibus minutis globosis. *Herbæ bulbosæ capenses, bulbi tunicis foveolatis, foliis congestis loratis membranaceis flabellatis, floribus paucis laxe spicatis, spathæ valvis oblongo-navicularibus membranaceis pallidis striis brunneis decoratis, apice laceratis, floribus versicoloribus.*

1. S. BICOLOR, *Sweet, Hort. Brit.* edit. ii. 501.—Gladiolus bicolor, *Thunb. Diss. Glad.* No. 16, t. 2. fig. 1; *Jacq. Ic.* t. 240.—Sparaxis bicolor, *Ker in König & Sims, Ann.* i. 225.—Ixia bicolor, *Ker in Bot. Mag.* t. 548. *C. B. Spei.*

2. S. GALEATA, *Sweet, Hort. Brit.* edit. ii. 501.—Gladiolus galeatus, *Jacq. Ic.* t. 258.—Sparaxis galeata, *Ker in König & Sims, Ann.* i. 225. *C. B. Spei.*

3. S. VARIEGATA, *Sweet, Brit. Flow. Gard.* t. 150.—Sparaxis luteo-violacea, *Eckl. Verz. Top.* 27.—S. Wattii, *Harv. MSS.* *C. B. Spei.*

64. GLADIOLUS, *Tourn.*

Tourn. Instit. 365, t. 190; *Linn. Gen.* No. 57; *Ker, Gen. Irid.* 129; *Klatt in Linnæa,* xxxii. 689.—Hebea (*Pers. Ench.* i. 44), *Ecklon, Topog. Verz.* 41.—Sphærospora, *Sweet, Brit. Flow. Gard.* edit. ii. 501, *non Klatt.*—Schweiggera, *Meyer in herb. Drège, non Mart.*—Symphyodolon, Ballosporum, Ophiolyza, Hyptissa, *et* Ranisia, *Salisb. Gen.* 142–3.

Perianthium irregulare, tubo supra ovarium producto curvato infundibulari, e basi ad faucem sensim ampliato, segmentis inæqualibus tubo æquilongis vel longioribus oblongo- vel obovato-spathulatis vel unguiculatis, supremo maximo recto dorso convexo, inferioribus minoribus flore expanso falcatis fauce sæpissime maculatis. *Stamina* 3, prope faucem tubi unilateraliter inserta, filamentis filiformibus arcuatis, antheris linearibus basifixis parallelis rectis. *Ovarium* triloculare, ovulis in loculo crebris; *stylus* filiformis cum staminibus arcuatus, stigmatibus tribus integris oblanceolatis. *Capsula* obovoidea chartacea loculicide trivalvis, seminibus sæpissime discoideis late alatis, testa tenui, interdum globosis exalatis, testa crassiore mucosa castanea, albumine corneo. *Herbæ elatæ bulbosæ capenses, africanæ tropicales, mediterraneæ et orientales, bulbi tunicis* *membranaceis brunneis, caule elato simplici vel ramoso, foliis paucis superpositis firmis ensiformibus vel linearibus sæpissime glabris, floribus magnis spicatis sæpissime rubro-purpureis, spathæ unifloris valvis integris sæpissime magnis lanceolatis viridibus.*

Subgenus I. EUGLADIOLUS. *Perianthii segmenta oblongo- vel obovato-spathulata.*

* *Species mediterraneæ et orientales.*

† *Semina discoidea alata.*

1. G. BYZANTINUS (*Bauhin, Pinax*, 41); *Miller, Gard. Dict.* edit. vi. No. 3; *Ker in Bot. Mag.* t. 874; *Reich. Ic. Crit.* t. 643. *Regio mediterranea.*

2. G. COMMUNIS, *Linn. Sp. Plant.* i. 52, ex parte; *Bot. Mag.* t. 86 et 1575; *Red. Lil.* t. 267; *Reich. Ic. Crit.* tab. 598; *Fl. Germ.* tab. 349. fig. 777. *Regio mediterranea.*

Var. G. NOTARISII, *Parl. Fl. Ital.* iii. 259. *Liguria.*

3. G. IMBRICATUS, *Linn. Sp. Plant.* i. 52; *M. B. Cent. Ross.* t. 60; *Reich. Ic. Crit.* tab. 599; *Fl. Germ.* tab. 350. fig. 778.—G. rossicus, *Pers. Syn.* i. 46.—G. tenuis, *M. Bieb. Fl. Taur. Cauc.* i. 29.—G. galiciensis, *Besser, Fl. Galic.* i. 51.—G. neglectus, *Schult. Obs.* 14. *Europa centralis orientalis, Caucasus, Persia borealis.*

Var. G. CRISPIFLORUS, *Herbert in Bot. Reg.* 28, *Misc.* 65. *Rossia meridionalis.*

Var. G. HYGROPHILUS, *Boiss. & Huet, in Huet, Pl. Armen. Exsic. Armenia.*

Var.? LIBANOTICUS, *Boiss. Diagn.* ser. ii. 4, 92. *Syria.*

4. G. ILLYRICUS, *Koch, Syn.* edit. ii. 806; *Sturm, Fl. Germ.* xix. t. 83; *Reich. Ic. Fl. Germ.* t. 352. fig. 780; *Syme in Seem. Journ. Bot.* i. t. 4; *Eng. Bot.* edit. iii. t. 1493. *Anglia, Europa meridionalis.*

Var. G. REUTERI, *Boiss. Pugill.* 113.—G. serotinus, *Welw. Exsic. Hispania, Lusitania.*

5. G. PALUSTRIS, *Gaud. Helv.* i. 97, vi. 336; *Sturm, Fl. Germ.* tab. ix. t. 351; *Reich. Ic. Fl. Germ.* tab. 351. fig. 779.—G. Boucheanus, *Schlecht. in Linnæa*, vii. 488.—G. palustris, *Dietrich, Fl. Boruss.* t. 13. *Europa centralis.*

†† *Semina globosa exalata* (Sphærospora, *Sweet*).

6. G. SEGETUM, *Ker in Bot. Mag.* t. 719; *Sturm. Fl. Germ.* xix. t. 719; *Reich. Ic. Crit.* t. 600; *Ic. Fl. Germ.* tab. 353. fig. 781.—G.

communis, *Linn.*, ex parte; *Sibth. & Smith, Fl. Græc.* t. 37.—G. italicus, *Gaud. Fl. Helv.* i. 96.—G. dubius, *Guss. Prodr. Suppl.* 8.—G. infestus, *Bianca in Att. Catan.* xix. 94.—G. tenuiflorus, *K. Koch in Linnæa*, xxi. 636.—Sphærospora imbricata, *Sweet, Brit. Flow. Gard.* edit. ii. 501, ex parte. *Regio mediterranea.*

Var. G. COMMUTATUS, *Bouché. Regio mediterranea.*

Var. G. LUDOVICÆ, *Jan, Elench.* i. *Italia, Gallia meridionalis.*

Var. G. INARIMENSIS, *Gussone, Enum. Pl. Inarinim.* 326, t. 14. *Italia.*

Var. G. GUEPINI, *Koch in Flora*, 1840, 466. *Gallia.*

Var. G. CAUCASICUS, *Herbert in Bot. Reg.* xxviii. *Misc.* 65. *Caucasus.*

7. G. KOTSCHYANUS, *Boiss. Diag.* xiii. 15. *Persia.*

8. G. ALEPPICUS, *Boiss. Diag.* xiii. 13. *Asia minor, Syria.*

** *Species minus cognitæ seminibus mihi ignotis.*

9. G. SPATHACEUS, *Parl. Fl. Ital.* iii. 262. *Sicilia.*

10. G. TRIPHYLLUS, *Sibth. in Flora Græca*, t. 38.—Sphærospora triphylla, *Sweet, Brit. Flow. Gard.* edit. ii. 501. *Cyprus.*

11. G. PERSICUS, *Boiss. Diagn.* vii. 102. *Persia.*

12. G. HALOPHILUS, *Boiss. Diag.* xii. 14. *Asia minor.*

13. G. ATROVIOLACEUS, *Boiss. Diag.* xiii. 14. *Persia.*

14. G. PETRÆUS, *Boiss. & Huet in Huet Fl. Armen. Exsic. Armenia.*

*** *Species capenses et paucæ africanæ tropicales.*

† *Angustifolii, perianthii segmentis oblongo-spathulatis acutis.*

15. G. TRISTIS, *Linn. Sp. Plant.* i. 53, ex parte; *Bot. Mag.* t. 272; *Jacq. Ic.* t. 243; *Red. Lil.* t. 35; *Ref. Bot.* t. 23; *Miller, Ic.* t. 235. fig. 1.—G. spiralis, *Pers. Syn.* i. 43. *C. B. Spei.*

Var. G. CONCOLOR, *Salisb. Parad.* t. 18; *Bot. Mag.* t. 1098. *C. B. Spei.*

16. G. GRANDIS, *Thunb. Fl. Cap.* i. 186.—G. tristis, var. grandis, *Thunb. Diss. Glad.* No. 8.—G. tristis, *Linn. herb.*, ex parte!—G. versicolor, *Andr. Bot. Rep.* t. 19; *Ker in Bot. Mag.* t. 1042.—G. versicolor, var. major, *Ker in Bot. Mag.* sub t. 556. *C. B. Spei.*

Var. G. LÆVIS, *Thunb. Prodr.* ii. 184.—G. versicolor, var. binervis, *Ker in Bot. Mag.* sub t. 1042. *C. B. Spei.*

Var. G. ELONGATUS, *Thunb. Prodr.* ii. 185.—G. pterophyllus, *Pers. Syn.* i. 43.—G. versicolor, var. longifolius, *Ker in Bot. Mag.* sub t. 556.—G. tristis, var., *Jacq. Ic.* t. 244. *C. B. Spei.*

Var. SUAVEOLENS, *Ker, Gen. Irid.* 136.—G. versicolor, var. tenuior, *Ker in Bot. Mag.* sub t. 566. *C. B. Spei.*

17. G. RECURVUS, *Linn. Mant.* 28; *Ker in Bot. Mag.* t. 578.—G. carinatus, *Soland. in Ait. Hort. Kew.* i. 64.—G. punctatus, *Jacq. Ic.* t. 247.—G. ringens, *Andr. Bot. Rep.* t. 27 et 227; *Red. Lil.* t. 123.—G. maculatus, *Sweet*; *Klatt in Linnæa*, xxxii. 708.—G. odorus, *Salisb. Prodr.* 40.—G. violaceus, *Pers. Syn.* i. 43.—Watsonia recurva, *Pers. Syn.* i. 43.—G. tristis, var. punctatus, *Thunb. Diss.* No. 8.—G. Breynianus, *Ker, Gen. Irid.* 135; *Miller, Ic.* 157, t. 235. fig. 2. *C. B. Spei.*

18. G. LONGICOLLIS, *Baker in Trimen's Journ.* 1876, 182. *Kaffraria.*

19. G. GRACILIS, *Jacq. Ic.* 246; *Red. Lil.* t. 425; *Ker in Bot. Mag.* t. 562.—G. setifolius, *Eckl. Topog. Verz.* 37.—G. spilanthus, *Spreng. in herb. Zeyher. C. B. Spei.*

20. G. LAMBDA, *Klatt in Linnæa,* xxxii. 708. *C. B. Spei.*

21. G. TRICHONEMIFOLIUS, *Ker in Bot. Mag.* t. 1483.—Ixia spathacea, *Soland. in herb. Banks. C. B. Spei.*

22. G. THUNBERGII, *Eckl. Top. Verz.* 37. *C. B. Spei.*

23. G. PUBESCENS, *Baker in Trimen's Journ.* 1876, 333. *Kaffraria britannica.*

24. G. ANGUSTUS, *Linn. Sp. Plant.* 55; *Linn., herb.,* ex parte!; *Hort. Cliff.* 20, t. 6; *Jacq. Ic.* t. 252; *Andr. Rep.* t. 589; *Red. Lil.* t. 344.—G. undulatus, *Jacq. Ic.* t. 251? *non* t. 257.—G. trimaculatus, *Lam. Ill.* i. 116. t. 32. fig. 3.—G. cordatus, *Thunb. Prodr.* ii. 185. *C. B. Spei, Africa tropicalis orientalis.*

25. G. CUSPIDATUS, *Jacq. Ic.* t. 257; *Ker in Bot. Mag.* t. 582.—G. angustus, *Linn. herb.* ex parte.—G. cuspidatus, var., *Andr. Bot. Rep.* t. 219.—G. cuspidatus, var. longiflorus, *Red. Lil.* t. 136.—G. undulatus, *Linn. Mant.* 27, ex parte.—G. affinis, *Pers. Syn.* i. 45. *C. B. Spei.*

Var. G. VENTRICOSUS, *Lam. Ency.* ii. 727.—G. cuspidatus, *Andr. Bot. Rep.* t. 147; *Red. Lil.* t. 36.—G. carneus, *Jacq. Ic.* t. 255; *Ker in Bot. Mag.* t. 591, *non Delaroche.*—G. cuspidatus, var. breviflorus, *Klatt in Linnæa*, xxxii. 721. *C. B. Spei.*

26. G. HASTATUS, *Thunb. Prodr.* ii. 185; *Ker in Bot. Mag.* t. 1564.——G. vomerculus, *Ker, Gen. Irid.* 142.—G. tigrinus, *Ecklon, MSS. C. B. Spei.*

†† *Angustifolii, perianthii segmentis obovato-spathulatis obtusis vel cuspidatis.*

Parviflori.

27. G. BREVIFOLIUS, *Jacq. Frag.* iii. 12, tab. 2. fig. 1; *Ic.* t. 249.—

G. carneus, *Andr. Bot. Rep.* t. 240, *non Delaroche.*—G. hirsutus, var. brevifolius, *Ker in Bot. Mag.* t. 727.—G. hirsutus, var. aphyllus, *Ker in Bot. Mag.* t. 992.—G. aphyllus, *Ker, Gen. Irid.* 134.—G. tristis, *Thunb. Diss.* No. 8, *ex parte. C. B. Spei.*

Var. G. OROBANCHE, *Red. Lil.* t. 125. *C. B. Spei.*

28. G. VILLOSUS, *Ker, Gen. Irid.* 133.—G. hirsutus, var., *Ker in Bot. Mag.* t. 823.—G hirsutus, var. villosiusculus, *Ker in Bot. Mag. sub* t. 727.—G. villosiusculus, *Soland. in herb. Banks.*—G. laccatus, *Thunb. Fl. Cap.* edit. ii. 45, excl. syn. *Jacq.*—G. pilosus, *Eckl. Top. Verz.* 38. *C. B. Spei.*

29. G. COCHLEATUS, *Sweet, Brit. Flow. Gard.* ser. ii. t. 140. *C. B. Spei.*

30. G. DEBILIS, *Ker in Bot. Mag.* t. 2585.—Geissorhiza albens, *E. Meyer in herb. Drège. C. B. Spei.*

31. G. STRIATUS, *Jacq. Ic.* t. 260.—Tritonia striata, *Ker in König & Sims, Ann.* i. 228. *C. B. Spei.*

32. G. TENELLUS, *Jacq. Ic.* t. 248; *Schneevoght, Ic.* t. 40.—G. tristis, varr. humilis *et* luteus, *Thunb. Diss.* No. 8. *C. B. Spei.*

33. G. TENUIS, *Baker in Trimen's Journ.* 1876, 335. *C. B. Spei.*

34. G. INFLATUS, *Thunb. Prodr.* ii. 185.—G. ringens, *Eckl. Top. Verz.* 37, *non Redouté. C. B. Spei.*

35. G. INVOLUTUS, *Delaroche, Diss.* 28, t. 3.—G. bimaculatus, *Lam. Ency.* ii. 727; *Miller. Icones,* 158, tab. 236. fig. 1. *C. B. Spei.*

36. G. ATROPURPUREUS, *Baker in Trimen, Journ.* 1876, 335. *Terra fluminis Zambesi.*

37. G. CŒRULESCENS, *Baker. Angola.*

38. G. LURIDUS, *Welw. herb. Angola.*

39. G. BREVICAULIS, *Baker. Angola.*

40. G. LAXIFLORUS, *Baker. Angola.*

41. G. GREGARIUS, *Welw. herb. Angola.*

42. G. BENGUELLENSIS, *Baker. Angola.*

43. G. HYALINUS, *Jacq. Ic.* t. 242.—G. strictus, *Jacq. Coll.* iv. 170. *C. B. Spei.*

44. G. VITTATUS, *Hornem. Hort. Hafn.* ii. 950.—G. fasciatus, *Roem. & Schultes, Syst. Veg.* i. 429.—G. undulatus, *Schneev. Icon.* t. 19.—G. undulatus, var., *Ker in Bot. Mag.* t. 538. *C. B. Spei.*

Grandiflori.

45. G. SALTATORUM, *Baker in Trans. Linn. Soc.* xxix. 155. *Africa tropicalis orientalis.*

46. G. corneus, *Oliver in Trans. Linn. Soc*, xxix. 155, tab. 100. fig. 1. *Africa tropicalis orientalis.*

47. G. Newii, *Baker in Trimen's Journ.* 1876, 334. *Regio temperata montis Kilimanjaro.*

48. G. ignescens, *Bojer, MSS.*; *Baker in Trimen's Journ.* 1876, 334. *Madagascaria.*

49. G. Melleri, *Baker in Trimen's Journ.* 1876, 334. *In ditione fluminis Zambesi.*

50. G. Welwitschii, *Baker. Angola.*

††† *Latifolii.*

Parviflori.

51. G. purpureo-auratus, *Hook. fil. in Bot. Mag.* t. 5944. *Natalia.*

52. G. ochroleucus, *Baker in Trimen's Journ.* 1876, 182. *Kaffraria transkeiana.*

53. G. crassifolius, *Baker in Trimen's Journ.* 1876, 334. *Natal, Orange Free State, Faku territory, Transvaal.*

54. G. Eckloni, *Lehm.*; *Klatt in Linnæa*, xxxii. 712.—Neuberia longifolia, *Eckl. Topog. Verz.* 37.—Gladiolus carneus, *Klatt in Linnæa*, xxxii. 722, *non Delaroche. C. B. Spei, Natal, Kaffraria, Orange Free State.*

55. G. sericeo-villosus, *Hook. Bot. Mag.* t. 5427.—Antholyza hirsuta, *Klatt in Linnæa*, xxxv. 379. *C. B. Spei.*

Var. G. Ludwigii, *Pappe. C. B. Spei, Natal, Orange Free State.*

56. G. spicatus, *Klatt in Linnæa*, xxxv. 377, *non Linn. Guinea.*

57. G. Papilio, *Hook. Bot. Mag.* t. 5565. *C. B. Spei, Natal, Orange Free State.*

58. G. multiflorus, *Baker. Angola.*

Blandi.

59. G. blandus, *Soland. in Ait. Hort. Kew.* i. 64; *Ker in Bot. Mag.* t. 625.—G. angustus, *Linn. herb., ex parte. C. B. Spei.*

Var. G. campanulatus, *Andr. Bot. Rep.* t. 188.—G. blandus, var., *Ker in Bot. Mag.* t. 645.—G. blandus, var. purpureo-albescens, *Klatt in Linnæa*, xxxii. 718.—G. blandus, var. campanulatus, *Ker, Gen. Irid.* 140. *C. B. Spei.*

Var. G. carneus, *Delaroche, Diss.* 30, t. 4. *C. B. Spei.*

Var. excelsus, *Ker in Bot. Mag.* t. 1665.—G. excelsus, *Sweet, Brit. Flow. Gard.* edit. 2, 501. *C. B. Spei.*

Var. G. albidus, *Jacq. Ic.* t. 256.—G. blandus, var. albidus, *Ker, Gen. Irid.* 140.—G. blandus, var. niveus, *Ker in Bot. Mag.* t. 648.—G. blandus, *Andr. Bot. Rep.* t. 99.—G. carneus, var., *Red. Lil.* t. 377. *C. B. Spei.*

Var. ? G. Gueinzii, *Kunze in Linnæa*, xx. 14. *C. B. Spei.*

60. G. oppositiflorus, *Herbert in Bot. Reg.* 1842, *Misc.* 98. *Madagascaria.*

61. G. Mortonianus, *Herbert in Bot. Mag.* t. 3860. *C. B. Spei.*

62. G. floribundus, *Jacq. Ic.* t. 254; *Ker in Bot. Mag.* t. 610.—G. grandiflorus, *Andr. Bot. Rep.* t. 118. *C. B. Spei.*

63. G. Milleri, *Ker in Bot. Mag.* t. 632.—Antholyza spicata, *Miller, Gard. Dict.* edit. 6, No. 2 (*Icones*, 27, t. 40). *C. B. Spei.*

64. G. undulatus, *Jacq. Ic. t.* 254; *Red. Lil.* t. 122; *Ker in Bot. Mag.* t. 647.—G. striatus, *Andr. Bot. Rep.* t. 111.—G. angustus, *Linn. herb., ex parte!* *C. B. Spei.*

65. G. hirsutus, *Jacq. Ic.* t. 250; *Red. Lil.* t. 278.—G. roseus, *Andr. Bot. Rep.* t. 11.—G. hirsutus, var. roseus, *Ker in Bot. Mag.* t. 574.—G. ambiguus, *Roem. & Schult. Syst. Veg.* i. 446.—G. mucronatus, *Lam. Ill.* i. 119. *C. B. Spei.*

Cardinales.

66. G. cardinalis, *Curt. Bot. Mag.* t. 135; *Schneev. Ic.* t. 27; *Red. Lil.* t. 122; *Kerner, Hort.* t. 19.—G. speciosus, *Eckl. Topog. Verz.* 41, *non Thunb.* *C. B. Spei.*

67. G. cruentus, *Moore in Gard. Chron.* 1868, 1139; *Hook. fil. in Bot. Mag.* t. 5810. *Natal.*

68. G. splendens, *Baker in Trimen's Journ.* 1876, 333. *C. B. Spei.*

Dracocephali.

69. G. psittacinus, *Hook. in Bot. Mag.* t. 3032; *Bot. Reg.* t. 1442; *Reich. Exot.* t. 116.—G. natalensis, *Reinw.*; *Lodd. Bot. Cab.* t. 1756; *Sweet, Brit. Flow. Gard.* ser. ii. t. 281.—Watsonia natalensis, *Eckl. Topog. Verz.* 34. *Natal, C. B. Spei, Transvaal, Africa tropicalis austro-orientalis.*

70. G. Cooperi, *Baker in Bot. Mag.* t. 6002. *Natal, C. B. Spei.*

71. G. Saundersii, *Hook. fil. in Bot. Mag.* t. 5873. *C. B. Spei.*

72. G. angolensis, *Welw. herb.* *Angola.*

73. G. decoratus, *Baker in Trimen's Journ.* 1876, 333. *Terra fluminis Zambesi.*

74. G. dracocephalus, *Hook. fil. in Bot. Mag.* t. 5884. *Natal.*

75. G. aurantiacus, *Klatt in Linn.* xxxv. 378. *Natal.*

76. G. Quartinianus, *A. Rich. Fl. Abyss.* ii. 307.—G. Schimperianus, *Steud. MSS.* *Abyssinia, terra fluminis Zambesi, Angola, Madagascaria?*

77. G. andongensis, *Welw. herb.* *Angola.*

Formæ notabiliores hortenses hybridæ *Eugladioli* sunt (cf. Herbert in Journ. Hort. Soc. ii. 89):—

G. Gandavensis, *Van Houtte, Cat.* 1844; *Flore des Serres*, March 1846, t. 1; *Paxt. Mag.* xi. 27. Inter *psittacinum* et *cardinalem*, fide Van Houtte; inter *psittacinum* et *oppositiflorum*, fide Herbert.

G. brenchleyensis, *Hort.*, ad *gandavensem* accedens.

G. Colvillei, *Sweet, Brit. Flow. Gard.* t. 155; *Paxt. Mag. Bot.* ii. 197. Inter *G. tristem* et *cardinalem*.

G. ramosus, *Paxt. Mag.* vi. 99. Inter *cardinalem* et *oppositiflorum*.

G. pudibundus, *Sweet, Brit. Flow. Gard.* ser. ii. t. 176; *Paxt. Mag. Bot.* ii. 197. Inter *blandum* et *cardinalem*.

G. Spofforthianus, *Herb.* Inter *blandum* et *cardinalem*.

G. mitchamiensis, *Herb.* Inter *tristem* et *blandum*.

G. rigidus, *Herb.* Inter *tristem* et *blandum*.

G. propinquus, *Herb.* Inter *floribundum* et *blandum*.

G. fragrans, *Herb.* Inter *recurvum* et *tristem*.

G. Haylockianus, *Herb.* Inter *versicolorem* et *blandum*.

G. Herbertianus, *G. Don.* Inter *tristem* et *Spofforthianum*.

G. odoratus, *Herb.* Inter *hirsutum* et *Spofforthianum*.

G. delicatus, *Herb.* Inter *recurvum* et *blandum*.

G. candidus, *Herb.* Inter *cardinalem* et *blandum*.

G. incarnatus, *Hort.* Inter *cardinalem* et *blandum*.

G. Willmoreanus, *Flore des Serres*, t. 639. Inter *floribundum* et *gandavensem*.

Subgenus II. Hebea. *Segmenta perianthii rotundato-rhomboidea vel obovata, omnia distincte unguiculata. Spathæ valvæ virides herbaceæ.*

78. G. alatus, *Linn. Sp. Plant.* 53; *Andr. Bot. Rep.* t. 8; *Bot. Mag.* t. 586.—Hebea alata, *Eckl. Topog. Verz.* 42.—Gladiolus speciosus, *Thunb. Prodr.* i. 196.—G. papilionaceus, *Licht. in Roem. & Schultes, Syst. Veg.* i. 408.—Hebea galeata, *Eckl. Topog. Verz.* 41. *C. B. Spei.*

Var. G. namaquensis, *Ker in Bot. Mag.* t. 592.—G. galeatus, *Andr. Bot. Rep.* t. 122.—G. equitans, *Thunb. Fl. Cap.* 192; *Act. Soc. Hafn.* vi. t. 2. *C. B. Spei.*

79. G. orchidiflorus, *Andr. Bot. Rep.* t. 241.—G. alatus, *Jacq. Ic.* t. 259, *non Linn.*—G. alatus, *Thunb. Diss.* No. 15, *ex parte.*—G. viperatus, *Ker in Bot. Mag.* t. 688; *Sweet, Brit. Flow. Gard.* t. 156.—G. virescens, *Thunb. Fl. Cap.* i. 196. *C. B. Spei.*

80. G. PERMEABILIS, *Delaroche, Diss.* 27, t. 2.—G. dichotomus, *Thunb. Diss.* No. 6.—G. edulis, *Burchell*; *Ker in Bot. Reg.* t. 169.—G. Dregei, *Klatt in Linnæa*, xxxii. 693.—Hebea Zeyheri, *Ecklon, Topog. Verz.* 42. *C. B. Spei.*

81. G. PULCHELLUS, *Klatt in Linnæa*, xxxii. 693.—Hebea pulchella, *Ecklon, MSS. C. B. Spei.*

82. G. FORMOSUS, *Klatt in Linnæa*, xxxii. 692.—Hebea formosa, *Eckl. Topog. Verz.* 42. *C. B. Spei.*

83. G. BICOLOR, *Baker.*—Hebea bicolor, *Eckl. Topog. Verz.* 42.—Gladiolus luteus, *Klatt in Linnæa*, xxxii. 694, *ex parte. C. B. Spei.*

84. G. LUTEUS, *Lam. Encyc.* ii. 725. *Madagascaria.*

85. G. UNGUICULATUS, *Baker.*—G. cochleatus, *Baker in Trimen, Journ.* 1876, 333, *non Sweet. Sierra Leone.*

Subgenus III. SCHWEIGGERA, *E. Meyer. Parviflori, segmentis omnibus obovatis vel oblongis longe unguiculatis. Spathæ valvæ parvæ brunneæ rigidulæ.*

86. G. MONTANUS, *Linn. Suppl.* 95; *Thunb. Diss. Glad.* No. 1, tab. 1. fig. 4.—Antholyza montana, *Ker in König & Sims, Ann.* i. 233; *Lodd. Bot. Cab.* t. 1022.—G. parviflorus, *Jacq. Obs.* iv. 2, t. 78.—G. tabularis, *Eckl. Topog. Verz.* 43.—Schweiggera nemorosa, *E. Meyer in herb. Drège. C. B. Spei.*

Var. RAMOSUS.—Hebea ramosa, *Eckl. Top. Verz.* 43.—Antholyza ramosa, *Klatt in Linnæa*, xxxii. 734. *C. B. Spei.*

87. G. ARENARIUS, *Baker.*—Hebea orchidiflora, *Eckl. Top. Verz.* 43, *sed non* Gladiolus orchidiflorus, *Andr.*—Antholyza orchidiflora, *Klatt in Linnæa*, xxxv. 733.—Schweiggera montana, *E. Meyer in herb. Drège. C. B. Spei.*

65. ANTHOLYZA, *Linn.*

Linn. Gen. No. 58 (*excl. sp.*); *Ker, Gen. Irid.* 154; *Klatt in Linnæa*, xxxii. 729.—Cunonia, *Miller, Dict.* edit. vi.—Petamenes, *Salisb. in Trans. Hort. Soc.* i. 324.—Anisanthus, *Sweet, Brit. Flow. Gard.* ser. ii. t. 84.

Perianthium valde irregulare, tubo supra ovarium longe producto curvato deorsum filiformi sursum cylindrico, segmentis valde inæqualibus oblanceolato- vel oblongo-spathulatis, supremo recto dorso convexo, inferioribus minoribus, flore expanso falcatis. *Stamina* 3, ad basin tubi partis cylindricæ unilateraliter inserta, filamentis filiformibus parallelis cum tubo arcuatis, antheris linearibus basi sagittatis. *Ovarium* oblongum triloculare, ovulis in loculo pluribus crebris; *stylus* filiformis, cum staminibus arcuatus, stigmatibus tribus integris oblanceolatis. *Capsula* magna oblonga trigibba chartacea loculicide trivalvis, seminibus variis, interdum turgidis exalatis, interdum triquetris anguste alatis, interdum discoideis late alatis; testa castanea, albumine corneo. *Herbæ elatæ bulbosæ capenses et africanæ tropicales bulbi tunicis membranaceis, foliis linearibus vel ensiformibus, caulinis paucis reductis, floribus multis speciosis spicatis, spathæ valvis lanceolatis vel oblongis viridibus vel brunneis integris vel interiore apice emarginata.*

* EUANTHOLYZA. *Semina turgida, nullo modo alata.*

1. A. ÆTHIOPICA, *Linn. Sp. Plant.* 54; *Bot. Mag.* t. 561; *Andr. Bot. Rep.* t. 210; *Red. Lil.* t. 110.—A. floribunda, *Salisb. in Trans. Hort. Soc.* i. 324.—A. prælta, *Red. Lil.* t. 387. *C. B. Spei.*

Var. A. RINGENS, *Andr. Bot. Rep.* t. 32.—A. vittigera, *Salisb. in Trans. Hort. Soc.* i. 324.—A. æthiopica, var., *Bot. Mag.* t. 1172. *C. B. Spei.*

Var. A. BICOLOR, *Gasp. in Belg. Hort.* ii. 145, *cum icone.*—A. æthiopica, var. minor, *Bot. Reg.* t. 1159. *C. B. Spei.*

** *Semina triquetra anguste alata.*

2. A. ABYSSINICA, *A. Brong. in A. Rich. Fl. Abyss.* ii. 306. *Abyssinia.*

3. A. CAFFRA, *Ker in König & Sims, Ann.* i. 232.—Anisanthus splendens, *Sweet, Brit. Flow. Gard.* ser. ii. t. 84.—Antholyza rupestris *et* brevifolia, *Ecklon, MSS., teste Klatt. C. B. Spei.*

*** *Semina discoidea, late alata.*

4. A. NERVOSA, *Thunb. Diss.* No. 3. *C. B. Spei.*

5. A. CUNONIA, *Linn. Sp. Plant.* i. 54; *Miller. Ic.* 75, t. 113; *Red. Lil.* t. 12.—Cunonia Antholyza, *Miller, Dict.* edit. vi.—Gladiolus Cunonia, *Gaertn. Sem.* i. 31, t. 11. fig. 4.—Anisanthus Cunonia, *Sweet, Hort. Brit.* edit. ii. 500.—Antholyza coccinea, *Spreng. Neue Ent.* i. 253. *C. B. Spei.*

6. A. HUILLENSIS, *Welw. herb. Angola.*

**** *Semina mihi ignota.*

7. A. QUADRANGULARIS, *Burm. Prodr. Fl. Cap.*—Gladiolus quadrangularis, *Ker in Bot. Mag.* t. 567.—Petamenes quadrangularis, *Salisb. in Trans. Hort. Soc.* i. 324.—Anisanthus quadrangularis, *Klatt in Linnæa,* xxxii. 727.—Gladiolus abbreviatus, *Andr. Bot. Rep.* t. 166.—Antholyza abbreviata, *Pers. Syn.* i. 42. *C. B. Spei.*

8. A. saccata, *Baker*.—Anisanthus saccatus, *Klatt in Linnæa*, xxxv. 300. *C. B. Spei.*

9. A. paniculata, *Klatt in Linnæa*, xxxv. 379. *Natalia.*

10. A. intermedia, *Baker*. *C. B. Spei.*

11. A. fucata, *Baker*.—Tritonia fucata, *Herb. in Bot. Reg.* xxiv. t. 35. *C. B. Spei.*

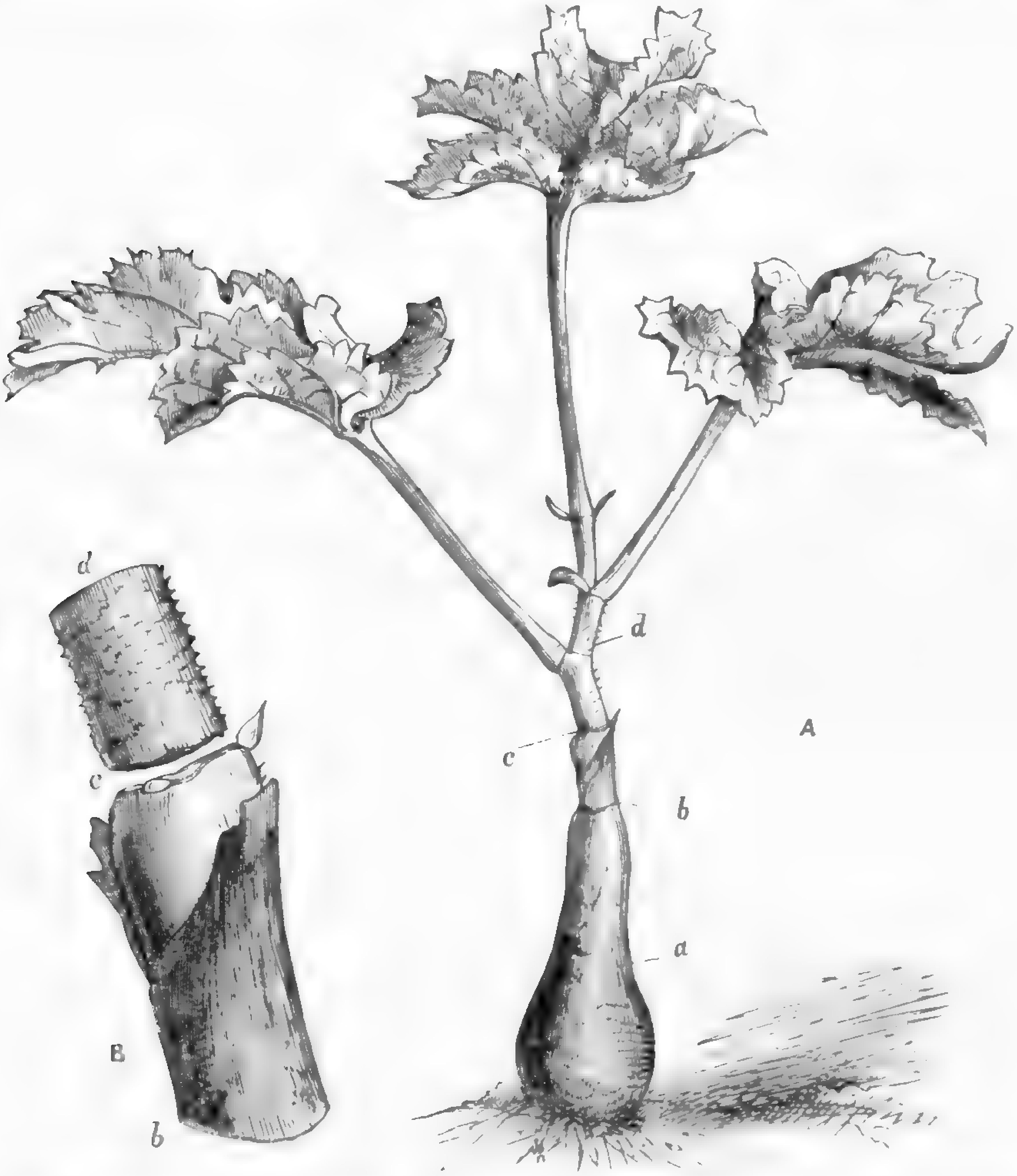
Note on the Disarticulation of Branches. By R. Irwin Lynch, Esq. Communicated by J. G. Baker, Esq., F.L.S.

[Read April 19, 1877.]

(Plate III.)

The object of the present communication is to bring before the Fellows of the Society a short notice of some striking examples of the disarticulation of branches, which recently have come under my observation. The literature of the subject includes:—a contribution by H. von Mohl to the 'Botanische Zeitung,' 1860; "On the shedding of branches and leaves in Coniferæ," by Dr. James Stark, in Trans. Roy. Soc. Edinb. vol. xxvii.; mention by Prof. Sachs, in his Text-book of Botany (Engl. trans. p. 446), of the case of *Taxodium distichum*, where the axes bearing the leaves are deciduous; and the Report of the Scientific Committee of the Roy. Hort. Soc. ('Gard. Chron.' 1877, p. 506), before whom Sir Joseph Hooker exhibited branches of *Dammara robusta*, illustrating their deciduous nature. It has thus been observed of many trees that branches are cast off in an irregular manner; and this often, I think, arises from the ripening process having ceased at the point where detachment takes place. *Vitis macropus* is a notable instance: only the lower part of the year's growth is ripened, and by far the larger portion falls away with the leaves (see subjoined woodcut). *V. cirrhosa* offers a similar illustration. A specimen at Kew has now two climbing stems ten feet long, the whole of which will apparently be cast off this autumn, with the exception of about three inches,—all above the second and third leaves respectively.

In *Castilloa*, however, the lateral branches are detached at the point of insertion, regularly from below upwards, apparently from the same cause that determines the fall of a leaf, leaving behind a similar scar (consult figs. 1–6, Plate III.). Nature, in this case, leaves a provision for replacement of the fallen branch: beside the scar there always exists a dormant bud, which bud is on either its right or its left side. In the Royal Gardens, Kew, are plants from two sources; in one case the buds are on the right, and in the other on the left side*. *Antiaris toxicaria* has the same habit of detaching its branches at the point of insertion. The scars do not always remain round, as in the illustrations, but



Vitis macropus, Welwitsch. Sketches from a living specimen growing in Kew Gardens. A, the entire plant, considerably reduced: *a*, the swollen base of the stem; *b*, line marking where last year's branch was thrown off; *c*, another line indicating the position of next disarticulation, the interval between *b* and *c* being the permanent portion of current year's growth; *d*, portion (all above *c*) which falls off with the leaves. B, another drawing, of natural size, of the parts of fig. A between the letters *b* and *d*. At *c* in this figure an interspace is given to show the mode of disarticulation of the year's growth from that part of the stem which remains.

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* The plants have further developed since writing the above, and show that exceptions may occur, the buds changing side in part or throughout the entire growth.

are gradually compressed to almost a horizontal line, and at last become obliterated.

In reply to some questions with reference to *Castilloa elastica*, I have received the following information from Mr. R. Cross, the well-known collector of Caoutchouc, *Cinchona*, and other plants. He states that in the forest the young Castilloas push up stems to a great height, and during the progress of growth throw out at variable distances a number of simple leafy shoots. These, on becoming mature, begin to wither in succession from the oldest or lowest, and finally separate by an articulation. At last, however, branches are produced which bear fruit and do not drop off. Sometimes the trunk, after running up to a certain height, divides into two or three stems, each furnished with numerous short stiff upright branches, which are permanent and ripen fruit abundantly. Probably, however, the "abortive" shoots are produced during the entire growth of the tree. Mr. Cross does not consider these to be "true" branches. He says that the wood is not properly formed, the buds are imperfectly developed, and from these the plant cannot easily be propagated. All this perhaps arises from the nourishment being required for the ascending growth—a conclusion borne out by the plants at Kew, which show that a given bud may grow into an erect permanent branch, or into a horizonal deciduous branch, according to the requirements of circumstances. The latter, if taken in time, appear, under cultivation, to strike as freely as the permanent branches. The character of a branch is evidently brought about by the direction of its growth.

In the preceding cases the disarticulatory branches have not a leaf-like appearance; in *Vitis macropus* (woodcut) they bear flowers and fruit, but never, as before said, in *Castilloa*, or perhaps in the case of *Antiaris*. In the following cases, however, the deciduous branches are very leaf-like (in some instances have been described for leaves) and bear flowers and fruit. The examples laid before the Society are *Phyllanthus* (*Reidia*) *glaucescens* and *P. juglandifolius*); further instances may be found in other species of the genus and in the allied genera of *Cicca*, *Sauropus*, &c., all belonging to Euphorbiaceæ. The leaf-like branches of these plants have much in common with true leaves; they fall off in the same way, and have buds in their axils which alone continue the permanent branching of the plant; the stem also is swollen at the base, as are many petioles. It must be remarked that branches are always axillary in production, and in these cases are subtended by

5
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bd
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1
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3

J.N.Fitch lith.

DISARTICULATION OF BRANCHES.

Fitch imp.

minute squamiform leaves. These leaves therefore subtend two buds, one of which grows into a leaf-like deciduous branch, and the other remains dormant unless required to produce a permanent branch. The deciduous branches have in some species the form of a pinnate leaf, as in the above mentioned, or may in some cases be supra-decompound, as, for instance, *Phyllanthus Conami*.

The foregoing has, I think, some interest, as bearing on the morphology of leaf and stem. In Dr. Masters's 'Vegetable Teratology,' p. 479, it is said that the two organs may be spoken of as morphologically identical. It is important to observe that the fall of a flower or inflorescence is equal, morphologically, to the fall of a branch, all the parts of the flower representing leaves.

DESCRIPTION OF PLATE III.

Fig. 1. Part of the stem, with portion of the branches and a leaf of *Castilloa elastica*, of natural size. Drawn from a specimen growing in the Royal Gardens, Kew. The following lettering (except where otherwise given) applies to this and the succeeding figures:—*br*, branch; *bd*, dormant buds; *sr*, scars remaining after the disarticulation of the lateral branches; *l s*, scars of the fallen leaf.

Fig. 2 is the lower portion of stem or continuation of fig. 1; and shows the scar of earliest fallen and lowest branch with the scar of its subtending leaf.

Fig. 3. A segment of the stem of another and larger specimen of *Castilloa elastica*, showing branch and leaf-scar, of natural size.

Fig. 4. Enlarged view, part of stem of fig. 2, showing leaf-scar in a different aspect.

Figs. 5 and 6. A profile and end view, showing the articular surface of a fallen branch of *Castilloa elastica*, slightly enlarged.

Fig. 7. Angle of junction of a stem and branch of *Phyllanthus juglandifolius*; *sl*, scale-like leaf.

Fig. 8. A portion of the stem, branches, leaves, and flowers of *Phyllanthus* (*Reidia*) *glaucescens*: *bd*, bud growing into permanent branch subtended by deciduous branch-bearing flowers; *sl*, scale-like leaf. Also from a plant growing at Kew and sketched of about nat. size.

Remarks on the Distribution of the Perfoliate Penny-Cress (*Thlaspi perfoliatum*, Linn.) in Britain. By GEORGE S. BOULGER, Esq., F.L.S., F.G.S.

[Read May 3, 1877.]

THE insignificant little Crucifer a few notes on which I wish to lay before the Society, derives its chief interest to us from its very limited area of distribution in Great Britain.

Dr. Hooker, in his 'Student's Flora,' gives its general distribution as "Middle and South Europe, North Africa, and North and West Asia," and its British locale and habitat as "Limestone pastures, rare; Oxfordshire and Gloucestershire." Mr. Hewett Watson, in the 'Cybele Britannica' (1846, vol. i. p. 118), writes of it as follows:—"South limit in Oxfordshire and Gloucestershire. North limit in the same countries. Estimate of provinces 2. Estimate of counties 2. Latitude 51°–52°. Local type of distribution. Agrarian region. Inferagrarian zone. Descends to —— ? Ascends to —— ? Range of temperature (48°) ? Native. Rupestral ? An extremely local plant, the area of which has been greatly extended through misapplications of the name. Apparently it is quite limited to the two adjoining counties indicated."

The reference here is to an erroneous record of the plant in the north of England.

"But," Watson continues, "the dividing line between those counties being also the dividing line between the eastern province of Thames and the western province of Severn, the species will stand proportionably higher in a provincial census than in one founded on counties. I cannot state anything exactly concerning the altitude or local situations in which this *Thlaspi* is found, and am consequently uncertain as to the temperature."

There are no specimens of the species in Dr. S. P. Woodward's Herbarium, now at the Cirencester Agricultural College, which was collected just before the publication of the 'Cybele.' I am not aware what other localities may have been recorded in Oxfordshire; but, I believe, Burford, only two miles from the Gloucestershire border, was always considered the most important. I have not heard of its occurrence there of late years.

Some years ago Professor Buckman, F.L.S., found the species, for several successive seasons, a little to the south-west of the village of Sapperton, in Gloucestershire, by the side of a road leading down the Sapperton branch of the great Stroud valley, the escarpment of the Great Oolite. This locality is just within the Severn drainage-area, and about a mile from one I shall mention presently. I visited it in vain last year.

In 1868 or '69 Professor Thiselton Dyer found the species about 300 yards west of the Tetbury-Road Station, well known to geologists for the interesting local patch of Bradford Clay. The plant was there growing on the side of the railway-embankment, on pure limestone. Professor Dyer described the locality and figured the plant most admirably in the 'Proceedings of the Cotteswold Club.' I believe either Professor Dyer or Professor Duthie also found it about a mile up the line westward, at Hayleigh Wood.

On the 2nd of last May and several succeeding days I visited these localities on the Great Western Railway, and found the plant growing in abundance on the embankments, on the ballast heaps, and between the rails. I traced it westward, with breaks of never more than two or three hundred yards, from Tetbury-Road Station, through Hayleigh Wood, to the mouth of the shorter of the two railway-tunnels at Sapperton. Climbing up the cutting I found it again on the top and traced it to a waste-heap over the tunnel. This was the furthest westward extension I could find, and is one of the highest points in the neighbourhood, being, I believe, nearly 500 feet above mean sea-level. On my map of the county I have drawn the line of watershed between the Thames and the Severn only a few yards west of this point.

I then returned to the Tetbury-Road Station and traced the *Thlaspi* eastward, beyond the station and viaduct, which marks the boundary of the county of Wilts, to a point just west of another archway, about halfway between Tetbury-Road and Kemble stations—that is, about half a mile over the county boundary.

Though this is not much on which to add a new county to the distribution of the species, it is about as much over the border as the well-known sole locality for *Carex tomentosa* at Marston Maisey; and, as I have mentioned, Burford is only two miles from Gloucestershire.

I had a specimen alleged to have been found on the College Farm at Cirencester, brought to me by one of the students; and Mr. S. F. Elton, of Cirencester, to whom I am indebted for much botanical information, has a specimen which he believes is from Baunton, rather more than a mile north-west of Cirencester. Finally Professor Church believes he has seen the species growing at Foss-bridge. If this last locality is confirmed it will be interesting as uniting that of Burford with the Sapperton-Kemble one, and as indicating that this calcareous waste-heap plant may have spread along the ancient Ackman Street.

The general distribution assigned to the species by Dr. Hooker may be, I suppose, expressed as the Old-world north temperate zone; but the term "rupestral" applied to its habitat by Mr. Hewett Watson is far more nearly accurate than Dr. Hooker's

"Limestone pastures." I doubt whether this species could possibly survive in a pasture. Its radical leaves do not usually form a strong rosette ; and all the spots where I have seen it were composed of loose limestone destitute of other plants. If it cannot be termed a "pascual" plant, it tells us little to term it "viatical." The exposed situations in which it occurs would render "glareal" an appropriate term, had not Mr. Watson himself confined it chiefly to sand and gravel. Most "rupestral" plants certainly are "calcophiles ;" so perhaps we must use that term in default of a better. Estimated roughly, the range of altitude I have observed is from about 360 feet to nearly 500 feet above mean sea-level.

The fact of the boundary between Oxfordshire and Gloucestershire coinciding with that between Watson's provinces of Thames and Severn, and that between Gloucestershire and Wiltshire with that between the Severn and Channel, illustrates very forcibly the unfortunately artificial characters of those provinces, which their author himself points out.

As a matter of fact, Professor Buckman's Sapperton locality alone is barely within the Severn basin ; and all the others, including that in Wiltshire, are in the Thames area.

P.S.—Since writing the above I find that Sir William Hooker records *Thlaspi perfoliatum* at Burford, Naunton, and Seven Springs, near Stow-on-the-Wold, in 1818 ; and Bagster, in 1839, as abundant at Foss-bridge. In the 6th ed. of 'The British Flora' of Hooker and Arnott it is also mentioned as occurring on stone walls about Kineton, Warwickshire. In 1844 Professor Buckman, in his 'Botany of Cheltenham,' writes, "about the stone quarries, at Kyneton Thorns, Harford Bridge, and the Seven Springs, Naunton. These habitats are perhaps the only ones . . . . as it has been lost from . . . . Burford." In Deakin's 'Florigraphia Britannica' (1845) "Burford and Upper Slaughter Oxfordshire ; Kineton, Gloucestershire," are given. Kineton is about ten miles from the Warwickshire border, Upper Slaughter almost as many from that of Oxfordshire, both places being in Gloucestershire. There is an unauthenticated record from near Bristol.

List of Hepaticæ collected by the Rev. A. E. Eaton at the Cape of Good Hope (August and September 1874). By WILLIAM MITTEN, A.L.S.

[Read April 5, 1877.]

(PLATES IV. & V.)

WITH two exceptions, the species enumerated in the following list were collected on the Cape-Town side of the base of Table Mountain and Lion Mountain, within the area bounded by the town, the cliffs of the two mountains, and the summit of the saddle-like Kloof between them. The Round House is only just beyond the brow of the Kloof. Two species were obtained near Klasenbosch Kloof on the opposite side of Table Mountain. Many more forms, no doubt, could be obtained along the remaining flanks of these mountains and on the hills near Simon's Town.

PLAGIOCHILA, *Nees et Mont.*

PLAGIOCHILA JAVANICA, *Swartz* (Jungermannia).—*Lindenberg, Spec. Hepat.* t. 4.

Hab. Base of Table Mountain near Cape Town.

Stems nearly simple, without fruit. Lindenberg conjectured that Thunberg had made a mistake in giving Java as the locality for this species, no specimens having been seen since from that country; but it is generally present in collections from the Cape of Good Hope.

P. SARMENTOSA, *Lehm.*—*Lindenb. Spec. Hepat.* t. 18.

Hab. Base of Table Mountain near Cape Town.

The specimens are barren, in which state only this plant is yet known.

JUNGERMANNIA, *Linn.*

JUNGERMANNIA COLORATA, *Lehm.*

Hab. Base of Table Mountain.

Growing with *Pœcilophyllum Zeyheri* (C. Muller), *Dicranum dichotomum*, Beauv., and *Hedwigidium imberbe,* in large brown tufts. All without fruit.

CEPHALOZIA, *Dumort.*

CEPHALOZIA TENUISSIMA, *Lehm.*—(Jungermannia).

Hab. Base of the Lion's Head, on damp soil, above the Kloof road, Cape Town.

Scattered stems with perianths are observable with *Fossombronia tumida*, and *Fimbriaria marginata*. It is a very minute species, nearly allied to *C. dentata*, Raddi.

LOPHOCOLEA, *Dumort.*

LOPHOCOLEA BIDENTATA, *Linn.*—(Jungermannia).

Hab. On the bank of a stream on the Cape-Town side of the base of Table Mountain.

Barren specimens, which appear to belong to this species.

L. SEMITERES *Lehm.*—(Jungermannia.)—Chiloscyphus semiteres, *Lehm. et Lindenb.*; *Gottsche Lindenb.* et *Nees. Syn. Hepat.* 190.

Hab. Base of Table Mountain, near Cape Town.

A small species nearly allied to the *L. heterophylla* of Europe, and strongly exhaling the same aromatic odour. The perianth is terminal, of an ovate outline, the angles alate for about half their length, the alæ being obtuse and but little dentate, the three lips at the apex obtuse and shortly dentate. The involucral leaves ovate, bidentate at their apices, with a few short teeth at their margins on both sides, combined at their bases with the obovate stipule, which at its apex is shortly toothed. As the leaves approach the perianth they become gradually more and more distinctly bidentate. Fertile specimens were gathered by Mundt.

CHILOSCYPHUS, *Corda.*

CHILOSCYPHUS EXPANSUS, *Lehm.*—(Jungermannia).

Hab. On a bank near trees on the side of a stream below the Kloof road, Cape Town.

Specimens barren. The species is not unlike *Lophocolea heterophylloidea*, Nees.

NOTOSCYPHUS, *Mitt. in Seemann, Fl. Viti.* 418.

NOTOSCYPHUS VARIIFOLIUS, *Mitt.* Caulis prostatus radicans. Folia antice incurva subquadrato-rotunda obtusissima integerrima e cellulis hexagono-rotundatis areolata pellucida. Amphigastria caule vix latiora ovata profunde bifida laciniis lanceolatis erectis. Folia versus involucrum acute obtuseve bidentata, involucralia majora marginibus ventralibus coadunatis dorsalibus ad medium usque liberis apicibus obliquis retusis. Amphigastrium involucrale liberum latius, laciniis inferne extus unidentatis. (Pl. IV. figs. 1–4).

Hab. On red earthy clay, and also on yellowish clay banks by a stream near Orange Grove, Cape Town.

Stems forming pale whitish-green patches. Leaves spreading or incurved, here and there tinged slightly with red, about a third of a line in diameter, with pellucid cells sharply defined by narrow walls. Near to this, but differing in its more orbicular leaves, with larger cells and less divided stipules, is the *Alicularia flexuosa* (Lehm.), Gottsche, Lindenb. et Nees, Syn. Hep. 11, which may be found to be congeneric when fertile specimens have been gathered. In the fructification, so far as can be seen from the specimens without capsules, the involucre resembles that of *N. lutescens*, Lehm. et Lindenb., and *N. Belangerianus* eorund. (*Jungermannia*), both of which were placed, in the 'Synopsis,' in *Gymnomitrium*. All the species emit many rootlets under the involucre, and seem to approach nearly to the genera which have a descending torus, as in *Lindigina*.

LINDIGINA, Gottsche.

LINDIGINA SCARIOSA, *Lehm.—Pug.* iii. (Jungermannia); Gymnomitrium scariosum, *Gottsche, Lindenb. et Nees, Syn. Hep.* 3. Caulis prostratus simplex crassus inferne radiculosus ex apice innovans. Folia sursum secunda conniventia arctissime imbricata opposita antice basi anguste combinata reniformia concava integerrima margine pallidiore scarioso limbata cellulis hexagonis parietibus angustis pellucidis in folii medio granulis repletis areolata. Perigynium tubulosum fuscum radiculosum longe in terram descendens. (Pl. V. figs. 1–6.)

Hab. On damp clayey soil in a field above the Kloof road beside the pine-plantation near Cape Town.

The specimens agree with those gathered by Ecklon. The species is minute and seems to plough its way along the surface of the earth by its thick stem, the leaves are so closely imbricated as to appear on the upper surface like an uninterrupted edge; and it is only when separated by the needle that their form or position is discernible. The outline of the leaves is reniform, the wider end being that towards the underside; no important modification of the leaves around the apex of the perigynium is observable; but no plants have been seen with capsules, and therefore none completely matured.

Very near to this species is the *Lindigia Liebmanniana*, Gottsche, Mex. Leverm. 120, t. 20 (*Gymnanthe*), from Mexico, which has leaves, according to the figure, of a reniform outline; and probably they are connected on the dorsal side, although on this point the description is silent. The genus *Lindigia* was changed to *Lindigina*, Gottsche, "Prodr. Fl. Novo-Granatensis" in 'Ann. des Sc. Nat.' 4me série, tom. i. 1864, *Lindigia* having been employed by Hampe for some species of *Meteoria*, of which the *Leskia aciculata*, Taylor, is one.

L. scariosa in the 'Synopsis' is described with leaves "lato rotundis," and in the 'Mexikanske Levermosser' *L. Liebmanniana* with leaves "obovatis cauli oblique adcretis;" amongst further particulars below, they are "ovato-rotunda obovatave." Fortunately there is a good figure of this species, exhibiting the leaves to be really reniform, as in *L. scariosa*; or identification, from the description alone, would be in either case almost impossible.

Fragments have been seen of another species of the *Lethocolea* group from the Cape of Good Hope, which may be the same as the *L. prostrata* from Tristan d'Acunha.

In the 'Handbook of the Flora of New Zealand,' in ignorance of *Lindigina*, *Lethocolea* was employed to designate some species which agree with those referred by Gottsche himself to *Lindigina*, yet in some respects differ from it if *L. Liebmanniana* is taken as the typical species, and also if its leaves are opposite and combined; it would then, with *L. scariosa* and *L. renifolia* and some other Mexican and South-American species, all with opposite and combined leaves on the dorsal side, form a group with a more lax areolation than is observable in the *Lethocolea Drummondii* and *L. concinna* of the Tasmanian flora, and also in the *Lindigina Granatensis*, Gottsche, "Prodr. Fl. N.-Granat." in 'Ann. des Sc. Nat.' 5me sér. tom. i. 1864, 137, in all which the leaves are alternate and of more dense substance.

In a Mexican species belonging to the opposite-leaved section of *Lindigina* the male inflorescence consists of antheridia in the saccate bases of cauline leaves as in *Lophocolea*.

L. RENIFOLIA, *Mitt.* Caulis prostratus simplex ex apice innovans subtus radiculosus. Folia opposita sursum incurva conniventi-imbricata reniformia apice lata truncata inflexa basi antice cum folio opposito anguste connexa integerrima e cellulis rotundo-hexagonis areolata. Perigynium tubulosum longe in terram descendens radiculosum. (Pl. V. figs. 7-12).

Hab. On hard bare damp soil in the interspaces of the brush-wood (*e.g.* a footpath) on the summit of the ridge of the Lion's Rump near the Signal-station.

Stems three or four lines long, with the leaves from half to three quarters of a line wide. Leaves all whitish green, closely imbricated on each side so as to leave a furrow along the middle, although the stem itself is everywhere covered. The perigynium, of a pale brownish colour, has many scattered hair-like roots; its transverse section shows it to be composed of about six strata of cells, of which the interior consists of much longer somewhat ovate cells affixed by their bases, the narrower ends being free. Very different from *L. scariosa* in its greater stature, and in the imbrication of its leaves (which have no scarious margin), but approaching in the outline of the leaf.

CALYPOGEIA, *Raddi.*

CLYPOGEIA BIDENTULA, *Web.*—(Jungermannia), *Nees ab E.*; *Gottsche, Lindenb. et Nees, Syn. Hepat.* 199.

Hab. Near Cape Town, above the Round House, Kloof road.

Stems all barren.

LEPEROMA, *Mitt. in Handbook of New-Zealand Flora*, ii. p. 751.

LEPEROMA OCHROLEUCA, *Spreng.*—(Jungermannia).

Hab. Base of Table Mountain near Cape Town.

Small barren specimens with *Lepidozia truncatella.*

LEPIDOZIA, *Dumort.*

LEPIDOZIA TRUNCATELLA, *Nees ab E.*

Hab. Base of Table Mountain, near Cape Town.

In patches associated with *Plagiochila sarmentosa, Dicranum dichotomum,* and *Pœcilophyllum Zeyheri*, C. Müller, without fruit.

RADULA, *Dumort.*

RADULA COMPLANATA, *Linn.*—(Jungermannia).

Hab. Base of Table Mountain, near Cape Town.

The specimens are in that form which has the margin of the leaf fringed with gemmæ.

R. PHYSOLOBA, *Mont.—Bot. Crypt. Itin. Astrolabe*, t. 17. f. 4.

Hab. Base of Table Mountain, near Cape Town.

Without fruit or inflorescence.

LEJEUNIA, *Libert.*

LEJEUNIA XANTHOCARPA, *Lehm. et Lindenb.—Gottsche, Lindenb. et Nees, Syn. Hep.* 330.

Hab. Base of Lion Mountain, above the Round House, Kloof road, Cape Town.

Very few perianths are present.

L. RUFESCENS, *Lindenb.—Gottsche, Lindenb. et Nees, Syn. Hepat.* 366.

Hab. Base of Table Mountain, near Cape Town.

This species has not been before reported from the Cape of Good Hope; it is, however, widely dispersed in austral regions. The specimens agree with those from Magellan, and are fertile.

L. CAPENSIS, *Gottsche—idem, Lindeb. et Nees, Syn. Hepat.* 374.

Hab. Base of Table Mountain, near Cape Town.

With *Radula complanata.*

L. ECKLONIANA, *Lindenb.—Gottsche, Lindenb. et Nees, Syn. Hepat.* 381.

Hab. Base of Table Mountain (exact site doubtful).

L. TABULARIS, *Spreng. Syst. Veg.* iv. 325—(Jungermannia).

Hab. Base of Table Mountain, near Cape Town (probably beside a stream, on a bank).

Growing with *Leptodon Smithii* and other mosses, but without perianths.

L. MINUTISSIMA, *Sm. Eng. Bot.* 1633.—(Jungermannia).

Hab. On the bark of poplar trees beside the stream at the commencement of Kloof road, Cape Town; also on the bank of the same stream nearer the quarry.

The small stems of this on bark and mixed with other species are not sufficient to decide if there are more than one South-African species similar to the European species.

L. HAMATIFOLIA, *Hook. Brit. Jung.* t. 51.

Hab. Base of Table Mountain, near Cape Town.

Without fruit, but presenting no difference in colour, stature, or habit from British examples; it has not been before received from the Cape of Good Hope.

FRULLANIA, *Raddi.*

FRULLANIA CAPENSIS, *Gottsche—idem, Lindenb. et Nees, Syn. Hepat.* 449.

Hab. On boulders and rocks near the quarry at the base of Table Mountain near Cape Town.

F. TRINERVIS, *Lehm. et Lindenb.—Gottsche, Lindenb. et Nees, Syn. Hepat.* 427.

Hab. On a tree in the public avenue near Government House; also on trees near a stream above Orange Grove, and on rocks in the same place as the preceding species, or just above the Round House, Kloof road, Cape Town.

F. BRUNNEA, *Spreng.*—(Jungermannia).—*Gottsche, Lindenb. et Nees, Syn. Hepat.* 441.

Hab. Base of Table Mountain, near Cape Town (exact site doubtful).

This pretty species, in the apiculate leaves and in the slender form and the position of its lobules, resembles the species of *Polyotus.*

FOSSOMBRONIA, *Raddi.*

FOSSOMBRONIA CRISPA, *Nees ab E.—Gottsche, Lindenb. et Nees, Syn. Hepat.* 569.

Hab. Base of Table Mountain, near Cape Town (exact site doubtful).

With *Fissidens rufescens,* Hornsch.

F. LEUCOXANTHA, *Lehm. et Lindeb. in Linnea,* iv.

Hab. Base of Lion's Head, on damp ground.

F. TUMIDA, *Mitt.* Caulis prostratus simplex brevis. Folia sursum incurva tumide imbricata conniventia ambitu rotundata concava integerrima e cellulis laxis pellucidis anguste limitatis areolata. Perianthium turbinatum margine repando-subdentato. Capsula magna sporis hemisphæricis obscuris papillosis. (Pl. IV. figs. 10 to 13.)

Hab. On damp ground near the pine-plantation at the foot of the Lion's Head, near the beginning of the Kloof road, Cape Town.

Stems from 2 to 4 lines long, the rootlets purple as usual in the genus, with the leaves a line wide. Leaves whitish green tinged with purplish brown, imbricated in such a manner that the plants have the appearance of being inflated when wet—which partly remains in the dry state, as they do not become crisped or contorted.

In many respects this species agrees with the *F. intestinalis,* Taylor, from Australia; but in that the spores are almost smooth and without evident papillæ.

SYMPHOGYNA, *Mont. et Nees.*

SYMPHOGYNA PODOPHYLLA, *Thunb.—Gottsche, Lindenb. et Nees, Syn. Hep.* 481.

Hab. In a kloof near Klasenbosch Wynberg, growing at the foot of trees in cæspitose masses and sheets, partly in and partly out of a stream, but exposed to the spray. Barren.

ANEURA, *Dumort.*

ANEURA MULTIFIDA, *Linn.*—(Jungermannia).

Hab. Wynberg side of Table Mountain, with *Symphogyna podophylla*, but more fully exposed to the water.

Differing slightly from European specimens in the more numerous branches, but without fruit.

METZGERIA, *Raddi.*

METZGERIA FURCATA, *Linn.*—(Jungermannia); var. *β*, minor, *Syn. Hepat.* 502; var. *δ* 1. *æruginosa, l. c.* 502.

Hab. Beside a streamlet above Orange-grove, Cape Town, on the bark of an oak tree, and on the ground.

LUNULARIA, *Micheli.*

LUNULARIA CRUCIATA, *Linn.*—(Marchantia).

Hab. On clayey soil at the side of a ditch bounding a pine-plantation near the commencement of the Kloof road, and in a field on the opposite side of the road at the base of the Lion's Head, and also near the Round House. Common.

A few barren fronds with gemmæ establish the presence of this or a nearly allied species in South Africa.

FIMBRIARIA, *Nees ab E.*

FIMBRIARIA MARGINATA, *Nees ab E.*

Hab. On damp ground. Near the first pine-woods along the Kloof road, Cape Town.

Growing with *Archidium capense*, Hornsch., and other small mosses. Specimens with perfected fruit.

TARGIONIA, *Micheli.*

TARGIONIA CAPENSIS, *Hueben.*

Hab. In the same place as the preceding.

RICCIA, *Micheli.*

RICCIA ALBOMARGINATA, *Bischof. Gottsche, Lindenb. et Nees, Syn. Hep.* 604.

Hab. At the base of the Lion's Head.

Some small fronds amongst *Fossombronia tumida* appear to be this species, which in the living state does not present distinctly the white margin; but after drying and again macerating in water, it becomes evident.

R. PURPURASCENS, *Lehm. et Lindenb. Gottsche, Lindeb. et Nees, Syn. Hep.* 611.

Hab. On damp soil near the Round House, and other parts of the Kloof road, Cape Town.

This species is very near to *R. fluitans*; and the plants grow very well floating on water, but become more slender and less green.

R. LIMBATA, *Bisch.—Gottsch., Lindenb. et Nees, Syn. Hep.* 606.

Hab. At the base of Lion Mountain. Growing amongst *Fossombronia tumida.*

The spores of this species are almost black, shining, and minutely pitted.

ANTHOCEROS, *Micheli.*

ANTHOCEROS MINUTUS, *Mitt.* Frons pusillus lobis obovatis retusis obtusisve teneris lævibus costa media obscura notatis, involucrum magnum ventricosum. Theca cylindracea basi angustata subpedunculata apice calyptra conica obtecta lævis sicca longitudinaliter plicata sporis rotundis lævibus. (Pl. IV. figs. 5 to 9.)

Hab. Base of Lion Mountain, in wet places near the Kloof road, above the Round House.

Fronds growing in patches with lobes about a line and a half long, scarcely half a line wide; when dry, blackish. Substance when wet, of thin-walled bladdery cells, towards the margins of the lobes in three strata, which are continued across the width of the frond; in the middle, beneath, are a mass of brown obscure cells constituting the costa, which is seen through the frond; below this costa is another series of three strata of cells, which are thin-walled and pellucid. The involucre is large for the size of the plant; it consists of a pale-brownish membrane of a nearly oval form; from this the capsule, rather more than a line long, is exserted; in the wet state it appears straight; but dry (in the unripened state), strongly plicate; at its apex it bears the small campanulate calyptra of a brownish colour. Within the capsule is a slender columella, round smooth spores, and short moniliform threads scarcely exceeding in length the diameter of the spores.

DESCRIPTION OF PLATES.

PLATE IV.

Fig. 1. *Notoscyphus variifolius.* Stem, of the natural size.
2. A portion of the same, with involucre, as seen at the side. Magnified.
3. A portion of the stem with leaves and stipule. Also highly magnified.
4. Two stipules next to the involucre, still more enlarged.
5. *Anthoceros minutus.* Plants of the natural size.
6. A portion, with involucres and fruit, surmounted by the minute calyptra. Magnified.
7. A transverse section of a frond with the central mass, which gives it a costate appearance. Also much enlarged.
8. Involucre laid open to show the pedicellate base of the capsule. Magnified.
9. Spores and elater. Also greatly magnified.
10. *Fossombronia tumida.* A stem, of the natural size.
11. Apex of the stem, with leaves, perianth, and capsule, as seen laterally. Greatly enlarged.
12. A single leaf, still more highly magnified.
13. Spores, also greatly magnified: *a*, as seen vertically; and *b*, lateral view.

PLATE V.

Fig. 1. *Lindigina scariosa.* Stem, of the natural size.
2. A stem, as seen from above, and considerably enlarged.
3. Apex of the same, more enlarged, and as seen laterally with the descending perigynium.
4. A portion of the stem, with the leaves opened to show their combination on the upperside. Also very considerably enlarged.
5. Cellular structure of the leaves towards the vertical margin, under a higher power of the microscope.
6. Cellular structure of the same towards the dorsal margin, also under a high power.
7. *Lindigina renifolia.* A stem, of the natural size.
8. The apex, with leaves and descending torus of the same, as seen laterally, and considerably enlarged.
9. A portion, more enlarged, of the stem, with leaves expanded.
10. A leaf removed from the stem.
11. The cellular structure of the leaf towards the ventral margin, under a high power of the microscope.
12. A portion of the transverse section of the perigynium, showing the larger partially free cells composing its interior surface. Highly magnified.

W. Mitten.

LINN. SOC. JOUR. BOT. VOL XVI. PL IV.

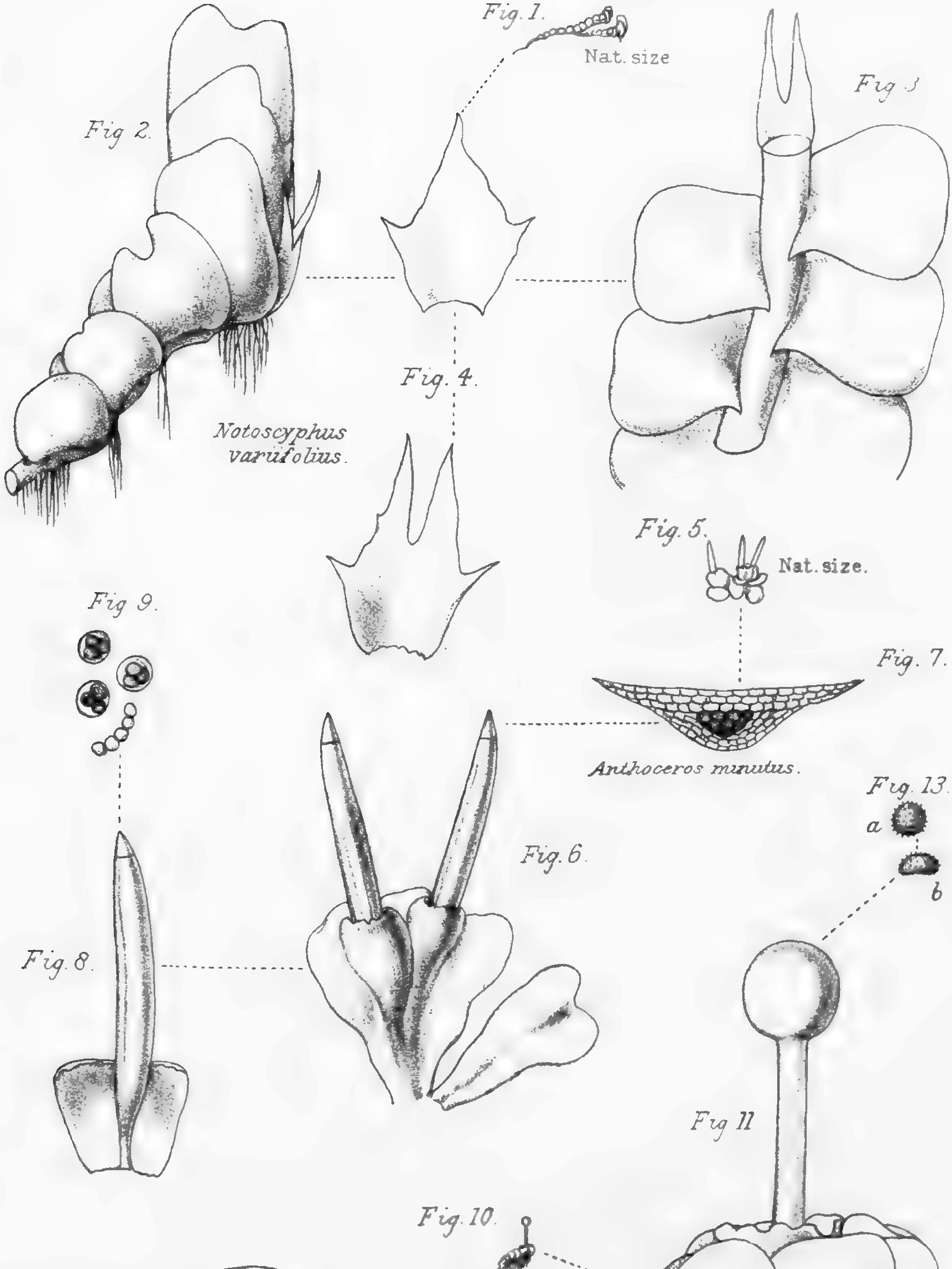
Fig. 1.
Nat. size
Fig 2.
Fig 3
Fig. 4.
Notoscyphus varifolius.
Fig. 5.
Nat. size.
Fig 9.
Fig. 7.
Anthoceros minutus.
Fig. 13.
a
b
Fig. 6.
Fig. 8.
Fig 11
Fig. 10.
Nat. size.
Fig 12.
Fossombronia tumida.

J N Fitch lith.

NEW CAPE HEPATICAE

Fitch imp

W Mitten.

Fig. 5.
Fig. 2.
Fig. 3.
Fig. 4.
Fig. 1.
Nat. size.
Lindigina scariosa.
Fig 6.
Fig. 7.
Nat. size.
L. renifolia.
Fig. 12.
Fig. 8.
Fig 11
Fig 10
Fig 9

NEW CAPE HEPATICAE

J.N Fitch lith.

Fitch imp

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From Vol. IX. the Zoological and Botanical portions of the Journal have been published separately, and each consists of Eight numbers.

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On a Collection of Ferns made by Miss Helen Gilpin in the interior of Madagascar. By J. G. BAKER, F.L.S.

[Read April 15, 1877.]

LAST session, I laid before the Society an account of a collection of Ferns, made in the interior of Madagascar, which had been presented to the Kew herbarium by Mr. W. Pool (Proc. Linn. Soc. vol. xv. p. 411). This spring I have had the opportunity of studying in detail another collection, made principally in the neighbourhood of Antananarivo by Miss Helen Gilpin, of the Friends' Foreign Mission Association, who has lately returned temporarily to England after a residence of many years in the capital of the island. Miss Gilpin's collection contains about 150 species of Ferns and the allied orders. In reporting upon it I shall not repeat the species included in my former list unless I have any thing fresh to say about them, and, as in my former paper, shall indicate, in the case of the novelties, by means of numbers prefixed to the names, the position into which the plants fall according to the arrangement adopted in our 'Synopsis Filicum.'

GLEICHENIA DICHOTOMA, *Willd.*

HEMITELIA MELLERI, *Baker*, in fine fructification.

TRICHOMANES FLABELLATUM, *Bory.*

T. RIGIDUM, *Sw.*

DICKSONIA HENRIETTÆ, *Baker.* "Creeps up the branches of trees to a height of 20–30 feet."

19*. D. HYPOLEPIDOIDES, *Baker*, n. sp. Frond deltoid, 2–3-pinnate, 2–3 feet long and broad. Rachis dull grey, finely pubescent, not at all scaly. Texture moderately firm; both surfaces green and, especially the lower one, finely pubescent all over. Pinnæ lanceolate, acuminate, the lowest the largest, a foot or more long, 1–2 inches broad; lower pinnules lanceolate, acute, free, cut away cuneately on the lower side at the base, with deep obtuse close erecto-patent entire lobes $\frac{1}{8}$–$\frac{1}{6}$ in. broad. Veins erecto-patent, fine, distant, forked or subpinnate in the lowest tertiary segments. Sori regularly seriate at the base of the ultimate sinuses, one to each, placed on the upper side of the ultimate lobes. Involucre a depressed round cup, $\frac{3}{4}$ line broad, highest on the inner side. General habit and texture like that of *Davallia strigosa.*

D. FLABELLIFOLIA, *Baker.* Under the great rock at the left-hand side of the waterfall of Andrangaloaka.

16*. Lindsaya madagascariensis, *Baker*, n. sp. Stipes (incomplete) glossy, brown, naked. Frond deltoid, bipinnate, membranous, bright green, glabrous, 5–6 in. long and broad. Lower pinnæ the largest, lanceolate, 2–3 in. long, 1–1½ in. broad at the base. Pinnules cuneate or rhomboid, ¼–½ in. broad, the lower ones shortly petioled, entire on the inner and lower borders, regularly rounded or somewhat angled for the rest of the edge, and irregularly denticulate. Veins few, distant, free, dichotomously forked. Sori distinctly intramarginal, the inner valve of the involucre narrow and membranous, the outer simply the unaltered denticulate upper and outer edge of the pinnule produced the breadth of the sorus beyond it.

We received a small specimen of this in 1874 from the interior of Madagascar, from Lady Barkly, gathered by Mr. Cameron. The general habit of the plant is completely that of *L. flabellulata*, in which the sorus is marginal and the two valves of the involucre are of equal breadth.

Var. intermedia, *Baker*. Pinnules again divided into cuneate tertiary segments ¼–⅙ in. broad at the tip.

Var. davallioides, *Baker*. Frond decompound, the pinnæ more deltoid than in the type, cut up entirely into laxly disposed ultimate segments ½–1 line broad at the tip, and the sori and involucre just those of *Davallia*, § *Odontoloma*.

Bears the same relation to the type that the Ceylonese *Davallia schizophylla*, Baker, Syn. Fil. edit. 2, p. 468, bears to *Lindsaya tenera*, and completely connected with the type by Miss Gilpin's fine set of specimens.

Lonchitis pubescens, *Willd*. The typical form, in addition to *L. madagascariensis*, Hook., and *L. polypus*, Baker, both of which are copiously represented in this collection.

13*. Cheilanthes (Adiantopsis) madagascariensis, *Baker*, n. sp. Stipe (incomplete), like the rachises, naked, glossy, castaneous. Frond subdeltoid, 3–9 inches long, 2–7 in. broad, chartaceous, green, glabrous, 3–4-pinnate. Pinnæ deltoid, patent, short-petioled, lowest the largest, 2–2½ in. broad, produced on the lower side. Pinnules oblong-deltoid, sessile or the lowest shortly petioled; tertiary segments oblong, obtuse, more produced on the upper side at the base, with a few obtuse lobes. Veins dichotomous, flabellate. Sori few, round, distinct, placed at the end of the ultimate lobes. Involucre glabrous, hemispherical.

Very close to the South-American *C. chlorophylla*, Sw., with which it quite agrees in texture and sori.

Adiantum lunulatum, *Burm.*

A. hispidulum, *Sw.*

Pellæa pectiniformis, *Baker.*

P. angulosa, *Baker.*

Pteris cretica, *L.*

14*. P. remotifolia, *Baker.* Stipe ½–1 foot long, like the rachises, glossy and stramineous. Frond 1–2 feet long and broad, deltoid, bright green, moderately firm in texture, glabrous, simply bipinnate, or in some of the specimens the lowest pinnules dilated and again pinnate. Pinnæ 3–7, lanceolate, the lowest the largest, 1¼–4 in. broad, caudate at the tip. Pinnules sessile, lanceolate, laxly disposed, 1–2 in. long, 2 lines or (the barren ones) 3 lines broad, cuneate at the base on both sides, subobtuse, the upper ones patent, many lower, more or less deflexed. Veinlets 15–30-jugate, very distinct, usually forked at the base. Sorus absent from the tip and base of the pinnules. Barren segments entire.

This is the plant mentioned in the account of Mr. Pool's collection as a probable new species midway between *P. quadriaurita* and *madagascarica.*

P. triplicata, *Agardh.* Miss Gilpin's specimens show conclusively that the Madagascar *P. Melleri*, Baker, is conspecific with *P. triplicata*, of Mozambique.

Lomaria biformis, *Baker.* Miss Gilpin's gatherings materially widen the range of variation here, as in some of the barren fronds the pinnæ are quite entire, and in others the upper pinnæ are entire and the lower ones regularly pectinato-pinnatifid.

Asplenium lunulatum, *Sw.* Besides the type, this collection includes characteristic examples of the varieties *harpeodes* and *Macræi.*

A. oligophyllum, *Kaulf.* This is a Brazilian species; but I cannot distinguish Miss Gilpin's Madagascar specimens and one received in 1874 from Lady Barkly, gathered by Mr. Cameron, from the Brazilian plant.

A. lætum, *Sw.* This, again, is only known previously in America; and we had it also from Lady Barkly, gathered by Mr. Cameron.

A. affine, *Sw.*, var. Pecten, *Baker.* Pinnæ regularly pectinato-pinnatifid, acuminate, many upper with all the lobes except the lowest on the upper side small, ligulate, erecto-patent and parallel. *A. affine* seems to be as variable in cutting in Madagascar as *A. lineatum* is in Mauritius, running into dareoid forms, both bipinnate and tripinnate and sometimes taking root at the tip; and yet, as known elsewhere, it keeps to the same characters over a wide geographical range.

109*. ASPLENIUM GILPINÆ, *Baker*, n. sp. Stipe (incomplete) green and scaleless, like the rachis. Frond oblong-lanceolate, bipinnate, under a foot long, 3–4 in. broad, membranous, glabrous. Pinnæ distant, short-petioled, lanceolate-acuminate, cut away cuneately on the lower side at the base, the lowest the largest, an inch broad, with shallow, close, erecto-patent, ligulate lobes in the upper, and a single free rhomboid pinnule on the anterior side at the base, which is ½-¾ in. long, ⅜–½ in. broad. Veins distinct, erecto-patent, ½ line apart, the lower compound, the upper simple. Sori median, 3–4 lines long, reaching neither the midrib nor the edge. Involucre narrow, persistent.

Very like the American *A. obtusifolium* in texture and the shape of the pinnæ, but in cutting coming near *horridum* and *protensum*.

126*. A. HERPETOPTERIS, *Baker*, n. sp. Rhizome about as thick as a goose's quill, flexuose, wide-trailing, nearly black, thinly clothed with spreading linear acuminate dark brown scales ⅙ in. long. Fronds distant, with slender faintly scaly stipes about an inch long, brownish, like the slender rachis. Lamina lanceolate, 3–6 inches long, 1–2 inches broad at the middle, narrowed gradually to both ends, tripinnatifid, glabrous, moderately firm in texture. Pinnæ sessile, lanceolate-deltoid, the central ones ½–1 in. long, ⅜-½ in. broad, cuneate-truncate on the lower side at the base, cut down to the rachis at the base, the lower segments cuneate, the upper ones ligulate and not so deep. Veins erecto-patent, one central in each of the ligulate segments, flabellate in the cuneate ones. Sori median, ⅛–¼ in. long. Involucre narrow, glabrous, persistent.

Differs mainly from the small forms of *A. affine* by its slender, wide-trailing rhizome, and, like *affine*, running into a dareoid variety.

A. VIVIPARUM, *Presl.*

A. (ATHYRIUM) NIGRIPES, *Blume.* Miss Gilpin's set of *Athyria* show a wide range of variety; but I do not think any of them are safely separable from *nigripes*. In some of them the frond is narrowed gradually to the base; and in others the lowest pinnæ are as long as the central ones. There is a small form with the lamina not more than half a foot long, and yet copiously soriferous, and another with ultimate segments regularly, closely, and sharply incised to a depth of a line or more.

220*. ASPLENIUM (DIPLAZIUM) BREVIPES, *Baker*, n. sp. Stipe (incomplete) slender, green, naked, like the rachis. Frond oblong-lanceolate, membranous, glabrous, simply pinnate, 6–8 in. long, 2–2½ in. broad at the middle, the lower pinnæ abbreviated. Pinnæ lanceolate, 10–12-jugate below the pinnatifid apex, the upper ones sessile, the lower distinctly petioled, the largest 12–15 lines long, ½ in. broad, obtuse, cuneate-truncate on the lower side at the base, produced on the anterior side and imbricated over the rachis, with shallow oblong lobes reaching in the lower part ¼–⅓ of the way down to the midrib. Veins pinnate opposite the lobes of the pinnæ, with 2–3-jugate ascending distinct veinlets. Sori usually one to each group on the lowest anterior fork, beginning at the base, but not reaching the tip, only few diplazioid. Involucre narrow, glabrous, persistent.

Andrangaloaka, 1871. Closely allied to the American *A. Shepherdi*, var. *caracasanum*.

NEPHROLEPIS CORDIFOLIA, *Presl*.

10*. NEPHRODIUM (LASTREA) TRICHOPHLEBIUM, *Baker*, n. sp. Stipe (incomplete) naked, brownish. Frond oblong-lanceolate, bipinnatifid, 15–18 in. long, 4–6 in. broad, not narrowed at the base, moderately firm in texture, pale green and finely pilose beneath, dark green and glabrous beyond the midrib above, copiously marked with white dots on the margin; rachis brown, finely pubescent. Pinnæ lanceolate, only the lowest minutely petioled, lanceolate, ⅝–¾ in. broad, truncate at the base, cut down about halfway to the rachis into oblong obtuse lobes ⅙–⅛ in. broad. Veins in pinnate groups opposite the lobes of the pinnæ, with 4–6-jugate distinct erecto-patent veinlets, the lowest pair ceasing before they reach the edge and bearing each a sorus at the tip. Sori on the other veins median. Involucre brown, glabrous, persistent, ⅓ line broad.

Allied to *N. subbiauritum* and *punctulatum*, which, like *N. albopunctatum*, show the same copious white dots on the edge of the lobes of the pinnæ.

17*. Nephrodium (Lastrea) subcrenulatum, *Baker*, n. sp. Stipe (incomplete) slender, castaneous, furnished, as is the rachis, with a few minute, linear, brown scales, and a little pubescence. Frond oblong-lanceolate, membranous, glabrous, bright-green, bipinnatifid, 8–12 in. long, 4–5 in. broad. Pinnæ lanceolate, patent, cut down nearly to the rachis into obscurely crenate, obtuse lobes 2–$2\frac{1}{2}$ lines broad; the central pinnæ shortly petioled, $\frac{5}{8}$–$\frac{3}{4}$ in. broad, the lowest pair deflexed and produced on the lower side ($\frac{3}{4}$ in. broad). Veins distinct, erecto-patent, 6–8-jugate, usually simple, but in the dilated segments of the posterior side of the lower pinnæ forked. Sori median. Involucre small, glabrous, persistent.

Most resembles *N. chrysolobum* and the small forms of *N. caripense*.

N. patens, var. madagascariense, *Baker*. Dwarf (lamina a foot long), densely pilose; many lower pinnæ gradually reduced; largest pinnæ 2 in. long, 4–$4\frac{1}{2}$ lines broad; segments at most a line broad, completely filled up with sori, 8–9 on a side; involucre persistent, densely pilose.

Recedes from the type in the direction of the pubescent varieties of *N. conterminum*.

45*. N. (Lastrea) anateinophlebium, *Baker*, n. sp. Stipe (incomplete) grey, naked. Frond oblong-lanceolate, bipinnatifid, moderately firm in texture, glabrous, $1\frac{1}{2}$–2 feet long, 7–8 in. broad, narrowed at the base; rachis finely grey-pilose, not scaly. Pinnæ sessile, lanceolate, acuminate, $\frac{3}{4}$–1 in. broad, cut down nearly or quite to the rachis into crenulate ligulate segments $\frac{1}{6}$ in. broad. Veins 8–9-jugate, simple, erecto-patent, very distinct. Sori small, supramedian, on the veins. Involucre minute, fugacious.

Allied to *N. conterminum*.

53*. N. (Lastrea) longicuspe, *Baker*, n. sp. Stipe (incomplete) naked, pale brown. Frond oblong-deltoid, bipinnatifid, $1\frac{1}{2}$–2 feet long, 10–12 in. broad, the lower pinnæ suddenly dwarfed, the lowest represented by a gland only, moderately firm in texture, glabrous except on the midrib of the pinnæ beneath, which, like the scaleless pale-brown rachis, is finely pubescent. Pinnæ very numerous, sessile, linear, with a long cusp, $\frac{1}{2}$ in. broad, cut down to a narrow wing into ligulate erecto-patent segments

½ line broad. Veins 10–12-jugate, simple, erecto-patent, distinct. Sori minute, median. Involucre minute, glabrous, persistent.

A very distinct plant, nearest *N. prolixum*, Baker, well marked by its long very narrow cuspidate pinnæ, very narrow segments, and copious minute sori.

NEPHRODIUM (LASTREA) BUCHANANI, *Baker*.

N. (EUNEPHRODIUM) PENNIGERUM, *Hook*.

183*. N. (EUNEPHRODIUM) COSTULARE, *Baker*, n. sp. Stipe (incomplete) green, naked, like the rachis. Frond oblong-deltoid, bipinnatifid, 2 feet or more long, a foot broad, membranous, bright green, entirely glabrous, or obscurely pilose on the midrib of the pinnæ beneath, not reduced at the base. Pinnæ all sessile, lanceolate, the lower ones 5–6 in. long, an inch broad, cut about ⅓ of the way down to the midrib into close oblong entire lobes ⅕–¼ in. broad. Veins 8–9-jugate, fine, erecto-patent, distinct, about three joining those of the next group by their tips. Sori small, costular. Involucre minute, fugacious.

This is the plant mentioned in the account of Mr. Pool's collection as a new species nearest *N. pennigerum*. Miss Gilpin's specimens are complete enough to enable me to characterize it.

N. (EUNEPHRODIUM) TRUNCATUM, *Presl*.

25*. POLYPODIUM (PHEGOPTERIS) FRAGILE, *Baker*, n. sp. Stipe (incomplete) slender, pale green, faintly pubescent. Frond oblong-deltoid, tripinnatifid, 6–9 in. long, 4–5 in. broad, bright green, membranous, with the veins on both sides densely ciliated. Pinnæ sessile, lanceolate, the lower ones 2–2½ in. long, ⅝–¾ in. broad, cut down to a narrow wing into oblong-oblanceolate pinnules, which are obtusely lobed ⅓–½ way down to the rachis; lowest pinnæ not reduced. Veins erecto-patent, forked or subpinnate in the lower tertiary lobes. Sori small, round, one to each tertiary lobe, placed near the tip of the anterior fork of the vein close to the bottom of the ultimate sinuses.

Resembling *Neophrodium flaccidum* in texture and cutting.

91*. P. (EUPOLYPODIUM) SYNSORUM, *Baker*, n. sp. Rhizome thread-like, wide-creeping. Stipes ¼–½ in. long, clothed with fine brown spreading hairs. Frond simple, coriaceous, ligulate, obtuse, cuneate at the base, 1–1¼ in. long, 2–2½ lines broad, glabrous. Veins simple, erecto-patent, hidden. Sori round, superficial, forming a row close to the midrib in the upper half of the frond, confluent, mixed with copious hairs.

91*. Polypodium (Eupolypodium) Gilpinæ, *Baker*, n. sp. Densely tufted. Stipes very short ($\frac{1}{4}$–$\frac{1}{2}$ in. long), clothed with fine brown spreading hairs. Fronds simple, ligulate, obtuse, 1–1$\frac{1}{2}$ in. long, $\frac{1}{6}$ in. broad, entire or obscurely repand, moderately firm in texture, narrowed from the middle to the base, thinly beset with erecto-patent brown hairs $\frac{1}{2}$ line long. Veins distant, simple, erecto-patent, thickened at the tip, and not reaching the edge. Sori round, superficial, $\frac{1}{2}$ line broad, median between the edge and the midrib, 8–12 on a side, with usually their own breadth between them.

149*. P. (Eupolypodium) perludens, *Baker*, n. sp. Stipe $\frac{1}{2}$–$\frac{3}{4}$ in. long, brown, wiry, flexuose, naked. Frond lanceolate, 5–6 in. long, $\frac{3}{4}$–1 in. broad, narrowed gradually to both ends, moderately firm in texture, glabrous, green, simply pinnate. Pinnæ about 30-jugate, crowded, broadly adnate at the base, linear, entire or very obscurely repand, the central ones $\frac{1}{2}$–$\frac{5}{8}$ in. long, $\frac{1}{12}$–$\frac{1}{8}$ in. broad. Veins simple, erecto-patent, 6–7 on each side of the midrib, not reaching the edge. Sori round, superficial, terminal on the veins, nearly or quite marginal.

Andrangaloaka, on trees. Very near *P. repandulum* and *deltodon*, but distinctly stipitate, with superficial marginal sori.

212*. P. (Eupolypodium) torulosum, *Baker*, n. sp. Stipes tufted, wiry, $\frac{1}{2}$–$\frac{3}{4}$ in. long, clothed with fine brown spreading hairs. Frond lanceolate, 3–4 in. long, 1–1$\frac{1}{2}$ in. broad, bipinnate, narrowed from the middle to both ends, moderately firm in texture, clothed with fine brown spreading hairs, which are most abundant on the rachis. Pinnæ narrow, linear, erecto-patent, 30–40-jugate, broadly adnate at the base, $\frac{1}{2}$ line broad, the upper and lower ones nearly entire, the rest with broad, obtuse, adnate lobes reaching nearly or quite to the midrib, which are almost truncate on the upper, and long, decurrent on the lower side. Veins immersed, simple, one running up each lobe. Sori round, superficial, one placed at the base of each lobe close to the midrib, 12–18 to the central pinnæ.

On a tree at Andrangaloaka. Allied to the rare Brazilian *P. achilleæfolium*, Kaulf.

18*. Notochlæna Streetiæ, *Baker*, n. sp. Stipe (incomplete) naked, castaneous, finely pilose, like the rachis. Frond deltoid, 3–4-pinnatifid, 5–6 in. long and broad, bright green, membranous; the veins ciliated with a few long hairs, the rest of the surface glabrous. Pinnæ few, the lowest pair much the largest, deltoid, distinctly petioled, 1½ in. broad, produced on the lower side, with bipinnatifid oblong-lanceolate lowest pinnules, which are much larger and more compound than any of the others. Ultimate lobes oblong, close, $\frac{1}{12}$–$\frac{1}{8}$ in. broad, reaching down about halfway to the midrib. Veins copiously pinnate in the ultimate lobes, with fine erecto-patent veinlets. Sori close or subremote, ½ line broad, round, with the margin not at all recurved.

Discovered by Mrs. Street. Habit and texture of the small forms of *Hypolepis Bergiana*.

GYMNOGRAMME LEPTOPHYLLA, *Desv.*

VITTARIA ELONGATA, *Sw.*

V. LINEATA, *Sw.*

ACROSTICHUM LATIFOLIUM, *Sw.*

A. LINEARE, *Fée.*

A. SQUAMOSUM, *Sw.*, var. LEUCOLEPIS, *Baker.* Lamina of the barren frond ⅜–¾ in. broad; both surfaces densely scaly. Scales white or pale brown, large, lanceolate, densely imbricated, ciliated only, not fimbriated; in one specimen ⅛ in. long in the lower third of the frond and suddenly black in the lower half.

Probably a distinct species; but I have not seen the fertile frond.

A. SORBIFOLIUM, *Linn.*

PLATYCERIUM MADAGASCARIENSE, *Baker.* Miss Gilpin has brought the barren frond, which was wanting in Mr. Pool's collection. It is nearly a foot broad, obversely oblong, 6–8 inches from the border to the point of attachment, entire, glabrous, coriaceous. The large strong raised veins forming irregular pentagonal areolæ, the central ones 1–1½ in. long, the outer ones growing gradually smaller.

SCHIZÆA DICHOTOMA, *Sw.*

MOHRIA CAFFRORUM, *Desv.*

LYCOPODIUM DICHOTOMUM, *Sw.* Exactly matching Brazilian specimens. New to the Old World.

L. CERNUUM, *L.*

LYCOPODIUM CLAVATUM, *L.*

SELAGINELLA MOLLICEPS, *Spring.*

S. LYALLI, *Spring.*

Amongst the few flowering plants of the collection are included female spikes of *Hydrostachys Goudotiana*, of which the inflorescence was previously unknown. The flowers form dense spikes 1–1½ in. long, ⅙ in. thick; and the oblong coriaceous bract is verrucose at the top and wrapped tightly round the capsule. There is also a new *Asparagus*, of which I give a description:—

ASPARAGUS MADAGASCARIENSIS, *Baker*, n. sp. A much-branched climber, with slender, bright green, glabrous branches, the ultimate ramuli subpatent, and growing gradually shorter towards the top of the branch. Leaves obscurely calcarate. Phyllocladia usually in threes, at the top of the branch, rarely solitary, flat, lanceolate, bright green, glabrous, cuspidate, 3–4 lines long, erecto-patent, with a very distinct midrib. Pedicels axillary, geminate, articulated at the middle, finally ¼ in. long. Flower not seen. Berry the size of a large pea. Of known species, approaching only *A. scandens*, Thunb., of the Cape.

ANGRÆCUM GILPINÆ. "Aphyllum (anthesi quidem), caulescens, radicibus tenuibus elongatis subcompressis (?) multiflexis, pedunculo apice racemoso, bracteis ovato-triangulis reflexis minutis, ovariis longipedicellatis, sepalis tepalisque ellipticis obtuse acutis, labelli lamina cochleari calceolari obtuse acuta, calcari sigmoideo obtuso ovarium pedicellatum non æquante, rostelli falcibus elongatis ascendentibus.

"A highly curious plant, with minute flowers, yellowish when dry, scarcely exceeding ⅓ inch. It is most curious for the rostellum, that points to the existence of a remarkable insect for its fertilization. It is most respectfully dedicated to its discoverer." —*Reich. fil. & S. Moore.*

Note on the Causes of the Numerical Increase of Parts of Plants.

By the Rev. GEORGE HENSLOW, M.A., F.L.S., F.G.S.

[Read June 7, 1877].

IN the following note I have attempted to classify the various methods and causes of the increase of parts of leaves and floral whorls, more especially with the view of limiting each of the various kinds to its proper cause respectively.

I. Atavism or Reversion.

1. *Dialysis* of normally "coherent" organs.
    - i. Of those coherent by organic union.
    - ii. Of those coherent by mechanical union.
2. *Solution* of normally "adherent" organs.

II. Hypertrophy.

1. *Polyphylly* :—
    - i. by the increase in number of individual parts, either of some or all those of a whorl.
    - ii. by the "symmetrical increase" of whorls.
    - iii. Restoration to a higher ancestral number.
2. *Pleiotaxy* :—
    - i. By the increase of the number of whorls.
    - ii. By the increase of the number of cycles.
3. *Pleiophylly* by the production of supernumerary leaflets.
    - i. Accidental numerical increase.
    - ii. Partial or entire restoration.

III. Supplemental Developments.

1. *Plication.*
3. *Enation,* producing appendicular processes.

IV. [Cause obscure.]

Chorisis, fission, or *bifurcation.*
i. of axes. ii. of axial appendages.

V. Atrophy.

Formation of compound foliar organs.

I. Atavism.—Under this head I would include *Dialysis* and *Solution* (Veg. Ter. Masters, pp. 69 & 76). For, I assume, on the well-known principles of evolution, that all normally coherent organs were originally free and distinct in their *ancestral* conditions; so that whenever normally united parts are developed free from each other, such I consider to be due to reversion in the sense of atavism.

Of cohesion I would recognize two kinds :—

- i. *Organic,* when the parts emerge from the axis already coherent, as do gamopetalous corollas.
- ii. *Mechanical,* when the parts are at first quite free, but unite subsequently by their adjacent edges, becoming coherent; as do the anthers of the *Compositæ* (by mucilage) and the stigmas of *Asclepias.*

Of examples of *dialysis* may be mentioned polypetalous *Cam-*

panula, Convolvulus, Primula, &c., as well as apocarpous pistils in flowers which are normally syncarpous.

As examples of *solution* are polysepalous and inferior calyces of apples and Umbelliferous plants associated with hypogynous petals and stamens.

The immediate cause of the solution in these cases is the arrest of development of the receptacular tube, in consequence of which the ovary remains superior and the calyx free.

II. HYPERTROPHY.—As effects of a superabundance of nourishment which must be expended in the development of supernume- organs, I would class:—

1. *Polyphylly* (*l. c.* p. 358); and of this phenomenon two varieties may be recognized.
    - i. The increase in number of some of or all the individual organs of a whorl.
    - ii. The "symmetrical increase" of whorls.
2. Restoration to a higher ancestral number.

First, any single organ may be doubled, trebled, or replaced by several. Thus two stamens often arise from the same gland in the place of one lateral stamen of a cruciferous flower. A similar phenomenon appears to occur normally in *Butomus*.

Secondly, of what I call the symmetrical increase of whorls, there are innumerable examples. In fact, any flower, say normally n-merous, seems capable of becoming $n+1$-, $n+2$-, $n+$ &c.-merous; Elder, Jasmine, Fuchsia, &c. may be mentioned.

Thirdly, as partial or entire restorations to an ancestral number, which is normally reduced, are leguminous flowers with two to five carpels. Poppies with three sepals and six petals are, as I believe, *reversions* to an ancestral trimerous arrangement.

The development of the stamens of *Hypericum* would seem to show that the terminal staminal papillæ are themselves early arrested, but give rise to a cluster of smaller lateral papillæ, each of which becomes a perfect stamen.

3. *Pleiotaxy* (*l. c.* p. 371), This term applies to an increase:—
    - i. In the number of whorls.
    - ii. In the number of cycles.

Examples of increase of whorls is seen in the multiplication of the bracts of the Wheatear Carnation, in the perianth of the double White Lily, in double Campanulas, &c., and in Stonecrops with an extra staminal whorl. I would include here the double Daffodil, the successive whorls of which undergo partial adhesion as well as partial dialysis at the same time.

Secondly, when flowers become double they may lose their verticillate character and become spiral. Thus, I counted more than forty petals in a double Wallflower.

4. *Pleiophylly.*—As in the case of polyphylly, the abnormal increase of the number of leaflets of foliar appendages may be either due to an accidental numerical excess, or to atavism, one or more leaflets being usually suppressed. Thus, compound leaves occasionally develop extra leaflets, as the 4–7-leafed Shamrock (*Trifolium repens*); so also does *Oxalis*, *Laburnum*, &c.; while the Willow called *Salix pendula multistipulata* develops several stipules. Such abnormal varieties may become permanent.

Some leaves, however, such as of the Elm, occasionally produce a supernumerary leaflet at the base of the blade (*l. c.* p. 353, fig. 183). This is a *restoration*; for the leaf is normally oblique in consequence of the arrest of development of the lowermost fibrovascular bundle on one side. If this be restored it produces a small leaflet occupying the space usually left vacant. A still further excess of development blends the leaflet into the main portion, and the leaf becomes simple and no longer oblique*.

III. SUPPLEMENTAL DEVELOPMENTS.—Under this head I would include all processes of *enation* (*l. c.* p. 443)—that is, outgrowths from organs *after* they have emerged from the receptacle or axis; such are spurs to corollas, which arise as saccate bulgings which become prolonged into spurs. Some forms of such processes, however, are not thus formed by the entire structure, but only by a *fold* in one epidermis. To such I apply the word *plication*. The rudimentary form may be seen in the " corona " of Forget-me-not, in *Primula*, and, in a more exaggerated condition, in that of *Narcissus*. In the latter example fibro-vascular bundles pass up the innermost and outermost membranes, but none occur on the outer epidermis of the corona, or on the inner or upper epidermis of the perianth-leaf.

IV. CHORISIS, FISSION, or BIFURCATION.—The causes of bifurcation are not clear. In some monstrous instances it may be simply due to injury at the apex of the organ. It may occur in axes, as when two cones or catkins take the place of one, or when the stems of ferns and the roots of *Lycopodium* bifurcate. Again it is frequent in foliar organs—as, abnormally in the fronds of *Scolopendrium*, or normally in the stamens of *Tilia*, *Malva*, and some of the *Amentaceæ*, and apparently also in *Adoxa*. In these andrœcia the anther-lobes are separated by "fission," which is carried down more or less towards the base of the filament, and are unilocular.

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* The cause of the obliquity of the Elm, Lime, &c., is, I believe, due to peculiar vernation, as I have elsewhere stated (Linn. Trans. vol. i. part 2, p. 37, sec. ser.). The stipules lie obliquely across the edges of the conduplicate leaf, and thus allow *one side* to develop more readily than the other.

The words "chorisis" and "fission" are inappropriate; for they express only the appearance, and not the real developmental process, as the stamens are not at first entire and then subsequently split; and I would, were it possible, use only "bifurcation," which simply describes the condition. Moreover, if chorisis be retained, I would limit its use to bifurcation alone.

Whenever supernumerary anthers are two-celled, such a stamen would not come under chorisis but hypertrophy, as in the case of *Hypericum*.

V. Atrophy.—To this cause I attribute all incised, cut, or laciniated foliar organs, and thence also compound leaves, which represent further conditions arrived at by the total arrest of the parenchymatous tissue between the fibro-vascular bundles. Several plants furnish transitional conditions which clearly prove this, as *Rubus fruticosus*, species of *Clematis*, *Rhus heterophylla*, &c.

The development of a lobed organ may easily give rise to a false conception; for the lobes begin as lateral outgrowths, and might be considered due to hypertrophy and not atrophy; but in normally lobed or compound leaves lateral protuberances would not occur at all if the intermediate tissue kept pace with them, as is the case with entire leaves.

Lastly, two or more of the preceding causes may act conjointly on a flower, inducing various modifications. Such is the case with a monstrous *Primula vulgaris* communicated by Miss Dowson and described by Dr. Masters in his paper "On some Points in the Morphology of the Primulaceæ" *, and which I have also examined. Thus:—

Corolla.—

1. By *atavism*, the five petals are nearly free.

2. By *chorisis*, the median fibro-vascular bundle bifurcates and thus increases the number of lobes to ten.

3. *Solution* has freed the corolla from the stamens, thereby disproving the theory that the corolla of *Primula* is an outgrowth from the andrœcium.

Stamens.—

1. The *solution* just mentioned separates them from the corolla.

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* Now in the press for the Society's 'Transactions.'

2. They are *transformed* into petals.

3. *Arrest* of lateral parenchyma between the branches of the veins causes several of the petaloid stamens to become laciniated.

4. *Change of sex* has occurred, by which the petaloid filament developed style and stigma; and the margins and even the midribs had become placentiferous and produced rudimentary ovules.

PISTIL.—This organ remained normal in all the flowers examined.

Contributions to the Botany of H.M.S. 'Challenger.'

XXXIX. The Lichens of the 'Challenger' Expedition (with a revision of those enumerated by Dr. J. Stirton in Linn. Journ. Bot. xiv. pp. 366–375). By the Rev. J. M. CROMBIE, F.L.S. &c.

[Read June 7, 1877.]

CAPE VERDE.

1. SCYTONEMA —— sp. ? [= *Gonionema velutinum**].

On rocks, Bird Island: very sparingly and sterile. (This is probably a new species, but is not sufficiently developed to be fully described).

2. COLLEMOPSIS PELIA (*Strn.*), sp. n. ?

On rocks: sparingly gathered. (There are no apothecia visible on the two fragments returned, so that the species is uncertain.)

3. ROCCELLA TINCTORIA, *DC.*

On rocks: fertile. [N.B. There are also smaller and more slender states from Bird Island, = *R. patellata*, Strn., sp. n.]

4. RAMALINA RIGIDA (*Pers.*) [= *R. scopulorum*, var. *tenuior*, Strn.].

On the ground: sterile.

5. R. CUSPIDATA, var. CRASSA, *Del.* [= *R. polymorpha*].

On maritime rocks: fertile and somewhat variable.

6. R. INTERMEDIA, *Del.* [= *R. farinacea*].

On the ground: sterile.

7. PARMELIA TINCTORUM, *Despr.* [= *P. tiliacea*, var. *scortea*].

On rocks: barren.

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* In this and the following instances I give Dr. Stirton's determinations within brackets.

8. PARMELIA PERFORATA, *Ach.* [=*P. conspersa*].
On rocks: sterile. (There is no specimen present of *P. lævigata*, enumerated by Dr. Stirton.)

9. PHYSCIA FLAVICANS (*Sw.*) [=*Alectoria epichrysa*, Strn., sp. n.].
On the ground: sterile.

10. P. LEUCOMELA (*L.*) [=*Alectoria sulcata*].
On the ground: sterile, mixed up with *P. flavicans*.

11. P. ADSCENSIONIS (*Ach. Syn.* p. 179).
On rocks: sterile, associated with *Scytonema*.

12. HEPPIA MEIOLEPIS, *Cromb.* [=*Endocarpiscum aterrimum*, Strn , sp. n., nomen ineptum, nam nihil atrum habet thallus]. Thallus obscure olivaceo-fuscus, squamulosus, squamulis sat tenuibus (latit. circiter 0·5 millim.), planiusculis, vel fertilibus convexiusculis, subsparsis; apothecia incoloria endocarpoidea (visa solum epithecio punctiformi, juniora); thecæ polysporæ turgidæ; sporæ incolores breviter ellipsoideæ, longit. 0·003–0·004 millim., crassit. 0·0020–0 0025 millim.; paraphyses gracilescentes. Iodo gelatina hymenialis cærulescens, dein vinoso-fulvescens.
On rocks: sparingly seen.

13. LECANORA (PLACODIUM) LEPIDOPLACUM, *Nyl.*, sp. n. [=*Placodium elegans*]. "Affinis *Placodio murorum*, sed thallo (vitellino-aurantiaco) deplanato squamuloso-adnato, squamulis ambitu lobulato-incisis. Apothecia saturatiora (latit. circiter 0·5 millim.), margine thallino integro cincta; sporæ longit. 0·008–0·0011 millim., crassit. 0·005–0·007 millim. Spermatia longit. 0·0025–0·0030 millim., crassit. 0·0007 millim.
Comparandum *Placodium subsolutum*, Nyl. (Pyr. Or. p. 50), mox differt squamulis thalli minus evolutis et sporis majoribus."
—*Nyl. in litt.*
On rocks: sparingly associated with the preceding species.

14. L. (PLACODIUM) FLAVORUBENS, *Nyl.*
On rocks: apparently frequent.

15. L. PYRACEA (*Ach.*).
On rocks: very sparingly (*fide* Dr. Stirton).

16. L. VINCENTINA, *Nyl.*, sp. n. [=*L. subfusca*, var. *atrynea*]. "Thallus albidus tenuis areolato-rimulosus (K+flavescens); apothecia pallida opaca (latit. circiter 0·5 millim.), margine sat tenui integro cincta; sporæ 8næ, ellipsoideæ, longit. 0·009–0·011 millim.,

crassit. 0·004–0·006 millim.; paraphyses graciles apice granuloso-inspersæ. Iodo gelatina hymenialis cærulescens, cærulescentia dein subpersistens (thecæ sæpe subviolascentes).

"Affinis videtur *Lecanoræ subcarneæ*, Nyl. A *L. Bogotana* pallidiore distat paraphysibus gracilentis. Spermogonia non visa." —*Nyl. in litt.*

On rocks, St. Vincent: very sparingly seen.

17. DIRINA REPANDA, var. [=*Lecidea teichiodes*, Strn., sp. n.]. On rocks, the only specimen seen being sterile. This is certainly not a *Lecidea*, but a *Dirina*, as is sufficiently shown by the characters of the thallus and the spermogones. It appears to be a var. of *D. repanda*, approaching to *schistosa*, Bagl. (vid. Nyl. Pyr. Or.); but as no apothecia are visible on the specimen returned, this is somewhat uncertain.

18. PERTUSARIA ALEIANTA, *Nyl.*, sp. n. [=*P. leioplaca*]. "Thallus albidus opacus, mediocris crassitiei (1 millimetri vel multo quidem tenuior), inæqualis, rimoso-diffractus K(CaCl) –; apothecia (in verrucis thallinis convexis inæqualibus variisque, 1–3-hymeneis inclusa) extus supra puncto obscuro ostioli demum indicata K(CaCl) –; sporæ 2–4næ, longit. 0·070–0·090 millim., crassit. 0·033–0·038 millim. Iodo thecæ intensive cærulescentes. Verrucæ thallinæ apothecia continentes plus minusve eminulæ et distinctæ, interdum subconfluentes. Spermatia acicularia recta longit. 0·010–0·012 millim., crassit. 0·0005 millim., utroque apice acutata.

"Comparetur *P. impallescens*, Nyl., ex insula Rodriguez."—*Nyl. in litt.*

On rocks: sparingly seen.

19. LECIDEA CANESCENS (*Dcks.*).

On rocks: sterile, associated with *Collemopsis pelia*. (Thallus K+ yellowish, CaCl –.)

20. L. EPIPASTA, *Strn.*, sp. n. (Nomen valde ineptum, nam nihil "effusum" adest: melius forte dicatur *L. epiplacodia*, Cromb.)

On rocks: parasitic on the thallus of *Lecanora flavorubens*.

(This species is in a certain way allied to *L. parasitica*; but the spores are colourless, normally 3-septate, 0·018–0·022 millim. long, 0·0035 millim. thick; and, what is of greater importance, the spermatia are arcuate as in the section of *L. aromatica*, to which consequently it belongs. It is there analogous to *Lecidea vitellinaria* in the section of *L. parasema*.)

21. LECIDEA THYRSODES, *Strn.*, sp. n. (As the diagnosis given by Dr. Stirton of this species does not agree with the plant so named on the fragmentary specimen, I have named this latter as follows.)

L. HETEROBOLA, *Cromb.*, sp. n. Thallus albidus tenuis vel tenuissimus continuus rugulosus, subrimulosus; apothecia nigra prominula submarginata (latit. circiter 0·5 millim.), intus strato medio albido; sporæ 8næ incolores bacillares 7-septatæ, longit. 0·048–0·078 millim., crassit. 0·002–0·003 millim.; paraphyses gracilescentes, bene discretæ, epithecium fuscescens, hypothecium cum perithecio fuscum. Iodo gelatina hymenialis vix tincta, thecæ dilute rosello-violascentes.

Accedere videtur sporis suis ad stirpem *Lecideæ bacilliferæ*, sed esse possit stirpis propriæ distinctæ.

On rocks: very sparingly seen.

22. L. MYRIOCARPA, *DC.*
On rocks: a small fragment.

23. OPEGRAPHA UNDULATA, *Strn.*, sp. n. (Nihil autem "undulatum" habet. Dicatur *O. dialeuca*, Cromb.)

On rocks: very sparingly seen. Spores constantly 7-septate 0·023–0·027 millim. long, 0·006–0·007 millim. thick; hypothecium colourless; perithecium black. A very distinct species of the genus, differing in various respects from *O. albo-atra*, Nyl. Enum. Gen. p. 131, which also, *ex* hb. Hooker, occurs in Cape Verde.

BERMUDA.

1. LEPTOGIUM DIAPHANUM (*Sw.*), *Ach.* [=*L. tremelloides*, var. *mesotomum*, Strn.].
On the bark of trees.

2. L. TREMELLOIDES, *Ach.* [=*L. marginellum*].
On the bark of trees: fertile and quite typical.

3. CLADONIA ACUMINATA, * HEBESCENS, *Nyl.* "Differt a *C. acuminata* (Ach.) squamulis crassiusculis subconvexulis. Sterilis modo visa. Forsan propria species."—*Nyl. in litt.*
On the ground: very sparingly seen.

4. C. FIBULA (*Ach.*) [=*C. turgida*, et var. *elegans*].
On the ground: fertile.

5. C. MITRULA, *Tuck.* [=*C. botrytes*].
On the ground: fertile.

6. Ramalina complanata (*Sw.*), *Ach.* [=*R. bermudiana*, Strn., sp. n.].

On branches of trees: fertile. (This of course bears no resemblance whatever to *Physcia chrysophthalma.*)

7. Parmelia tinctorum, *Despr.* [=*P. tiliacea*, var. *scortea*].

On putrid trunks: sterile.

8. P. perlata (*L.*) [=*P. physodes*, var. *labrosa*].

On old wood: infertile. (The specimen is very much sorediate at the margins of the lobes.)

9. Physcia Leana, *Tuck.* [=*P. speciosa*].

On bark of trees, very sparingly. (Thallus K−. The specimen is somewhat smaller than the original muscicole plant from Ohio.)

10. P. obsessa (*Mnt.*), *Nyl. Syn.* p. 426 [=*P. stellaris*].

On thin bark, very sparingly.

11. Lecanora subfusca, *sylvestris, *Nyl. in Mand. Lich. Mader.* No. 1.

On thin bark, very sparingly, associated with the preceding species. (Spores 0·008–0·011 millim. long, 0·004–0·007 millim. thick.)

12. L. Bermudensis, *Nyl.* [=*L. subfusca*, var. *argentata*]. "Affinis *L. umbrinæ*, sed mox differens, margine thallino apotheciorum integro, paraphysibus gracilescentibus, &c. Thallus K−."—*Nyl. in litt.*

On bark of trees: only a fragment seen.

13. L. chlaronella, *Nyl.* [=*L. varia*, var. *symmicta*]. "Similis *L. chlaroterodi*, Nyl. in Flora, 1876, p. 508, Cubanæ, sed differt gelatina hymenialis iodo vinose fulvescente (præcedente cærulescentia). Spermogonia non visa."—*Nyl. in litt.*

On bark of trees: a very small specimen only seen.

14. L. glaucomodes, *Nyl. in Flora*, 1876, p. 509, *conflectens, *Nyl.* [=*L. angulosa*, var. *albo-pruinosa*, Strn.]. "Differt, *L. conflectens* a *glaucomodi*, paraphysibus distinctis, iodo gelatina hymeniali vinose fulvescente, etc."—*Nyl. in litt.*

On the bark of trees: very sparingly.

15. Pertusaria papillata (*Ach.*), *Nyl.* [=*P. leioplaca*].

On the bark of trees: a mere fragment.

16. Pertusaria pustulata (*Ach.* [=*P. melaleuca*].

On the bark of trees: sparingly seen.

17. Lecidea fuscorubescens, *Nyl.*, *L. Andaman*, p. 10 [=*L. caliginosa*, Strn., sp. n.].

On the bark of trees: sparingly seen.

N.B. "*Lecidea fuscorubescens*, Nyl. Port Natal, p. 8, is to be separated from the present species on account of its larger and more turgid spores (0·011–0·017 millim. long, 0·007–0·010 millim. thick), and to be called *Lecidea Natalensis*, Nyl."—*Nyl. in litt.*

[L. euporiza, *Strn.*, sp. n.]

On the specimen returned there is nothing rightly developed, and nothing at all lecideine. It seems rather to be something of a mycological nature.

18. L. semiusta, *Strn.*, sp. n.

On rocks: very fragmentary.

(This belongs to the section of *L. trachona*, Flot., and, indeed, may be merely a state of that species; but the fragment, on which only two apothecia are visible, is scarcely determinable. Spores 0·009–0·011 millim. long, 0·003 millim. thick.)

19. L. revertens, *Strn.*, sp. n.

On calcareous rocks: a mere fragment.

(This species is apparently closely allied to *L. misella*. Spores 0·006–0·008 millim. long, 0·002–0·003 millim. thick.)

20. L. insperata, *Nyl. N. Gran.* p. 31 [=*L. myriocarpa* (*DC.*) ex Strn. in Sched.].

On the bark of trees, associated with *Pertusaria pustulata*.

(Nylander observes *in litt.* that, notwithstanding the character of the spores, this species is rather a *Lecidea* than a *Lecanora*. Spores 0·012–0·018 millim. long, 0·005–0·008 millim. thick.)

21. Graphis Afzelii, *Ach.*

On bark of trees: well fruited.

22. G. (Lecanactis) lobata (*Eschw.*) [=*G. punctiformis*].

On the bark of trees, sparingly.

23. G. scripta, *Ach.* [=*G. nematodes*, Strn., sp. n.].

On branches: probably not uncommon.

24. Arthonia polymorphoides, *Nyl.*, sp. n. [=*A. interveniens*]. "Sat similis *A. polymorphæ*, Ach., sed mox differt gelatina hymeniali iodo persistenter cærulescente et sporis vinose rubescenti-

bus. Sporæ oblongæ 5-septatæ, longit. 0·016–0·023 millim., crassit. 0·006–0·007 millim. Spermatia arcuata, longit. 0·012–0·016 millim., crassit. 0·0005 millim."—*Nyl. in litt.*

25. Arthonia rubella, *inferiuscula, *Nyl.* [=*A. velata*, Strn., sp. n.]. "Differt ab *A. rubella* præsertim sporis nonnihil minoribus, 0·023–0·030 millim. long, 0·009–0·015 millim. thick."—*Nyl. in litt.*

On the bark of trees: very sparingly seen.

(N.B. The specific name *velata*, Strn., has long ago been given by Flotow to another species.)

26. Verrucaria ruderella, *Nyl.*, sp. n. "Similis *V. ruderum*, sed sporis longe minoribus, longit. 0·014–0·019 millim., crassit. 0·009–0·012 millim."—*Nyl. in litt.*

On calcareous rocks, very sparingly, associated with *Lecidea semiusta.*

27. Endococcus thalamita, *Nyl.*, sp. n. "Pyrenia habet incoloria vel dilute fuscescentia immersa (latit. circiter 0·1 millim., vel minora) in thalamio *Lecideæ insperatæ*; thecæ polysporæ; sporæ fuscæ ellipsoideæ leviter 1-septatæ, longit. 0·007–0·010 millim., crassit. 0·003–0·004 millim. Iodo gelatina hymenialis vinose rubescens. Apothecia parasita occupata sine paraphysibus, thecis, etc."—*Nyl. in litt.*

On the bark of trees, sparingly, associated with *Pertusaria pustulata*, Ach.

28. Trypethelium cruentum (*Mnt.*).

On branches: probably not uncommon.

Azores (Furnas).

1. Cladonia fimbriata, *Hffm.* [=*C. pyxidata*, var.].

On rocks: sterile.

2. C. sobolifera (*Del.*), *Nyl.* [=*C. squamosa*].

On the ground: sterile and but little evolute.

3. Roccella phycopsis, *Ach.*

On rocks? barren.

4. Sticta pulmonacea, *Ach.*

On trees: infertile.

5. S. damæcornis (*Sw.*).

On trees: fertile.

6. Parmelia perlata (*L.*).
On trees: sterile. (One specimen also occurs labelled *P. conspersa.*)

7. P. perforata (*Wulf.*).
On bark: infertile and small.

8. Lecidea endoleuca, *Nyl.* [=*L. cyanochroa*, Strn., sp. n.].
On bark: very sparingly seen. (The plant is entirely similar to the European. Spores, 0·045–0·055 millim. long, 0·0035 millim. thick; paraphyses *blackish* at the apices; hypothecium beneath purplish brown or subcolourless.

Teneriffe.

1. Ramalina minuscula, *Nyl.* [=*R. aulota*, Strn., sp. n.].
On rocks: fertile. (Spores 0·010–0·015 millim. long, 0·004–0·006 millim. thick.)

2. Sticta aurata, *Ach.*
On trees: sterile. (A state with the thallus somewhat paler than usual, but otherwise not at all like var. *pallens*, Nyl.)

3. Parmelia glabra (*Schaer.*), *Nyl.* [=*P. olivacea*, var. *stygia*].
On rocks: fertile. Thallus CaCl ∓.

4. Lecanora (Squamaria) saxicola (*Poll.*).
On rocks: a small specimen.

5. L. (Squamaria) melanophthalma (*Ram.*).
On rocks: fragmentary specimens.

6. L. (Placodium) subelegans, *Nyl.*, sp. n. [=*P. murorum*, var. *miniatum*]. "Subsimilis *P. eleganti*, sed mox differens sporis majoribus vel turgidioribus (longit. 0·010–0·015 millim., crassit. 0·007–0·009 millim.). Spermatia oblonga, longit. 0·025–0·030 millim., crassit. 0·0010 millim."—*Nyl. in litt.*
On rocks, very sparingly.

7. L. parella, *Ach.* [=*L. pallescens*].
On rocks: quite typical.

8. L. Teneriffensis, *Nyl.* [=*L. noseriza*, Strn., nomen informe]. "Thallus e granulis albis minutis (K –) constans, sparsis in hypothallo nigro maculiformi; apothecia dilute luteo-pallida (latit. 0·5 millim. vel minora), margine thallino subcrenato cincta; sporæ 4–8næ incolores ellipsoideæ, longit. 0·011–0·014 millim., crassit. 0·07–0·010 millim.; paraphyses gracilescentes, superius et epithe-

cium granuloso-inspersa. Iodo gelatina hymenialis bene cærulescens, dein thecæ violaceo-fulvescentes.

Species peculiaris comparanda cum *L. Bermudensi*, sed mox differens thallo alio, margine thallino apotheciorum subcrenato-inæquali, etc. Spermogonia non visa."—*Nyl. in litt.*

On bark of trees: only a small fragment seen. (This species evidently has nothing in common with *L. varia.*)

9. URCEOLARIA SCRUPOSA * BRYOPHILA, *Ach.* [= *U. scruposa*].

On the ground, along with the barren thallus of *Cladonia pyxidata.*

10. LECIDEA GEOGRAPHICA (*L.*).

On rocks, associated with *L. saxicola.*

11. L. ? ATROBRUNNEA (*DC.*).

On rocks: sterile and doubtful.

FERNANDO DE NORONHA.

1. LECANORA RECUBANS, *Strn.*

On rocks; well fruited. (This species is allied to *Lecanora bella*, Ach.).

BAHIA.

1. LEPTOGIUM TREMELLOIDES (*Ach.*).

On trees? sparingly fertile.

2. PARMELIA PERSULPHURATA, *Nyl.* "Subsimilis *Parmeliæ sulphuratæ*, Nees et Flot., Nyl. Syn. p. 377, sed nonnihil minor, thallo vix isidiosulo, subsorediosa, intus sulphureo-aureo, marginibus lobulorum passim crenulato-incisis. Apothecia et spermogonia ignota. Thallus K±." *Nyl. in litt.*

On the bark of trees; only a small fragment seen. Formerly gathered in Louisiana, *Tuck.*, who does not distinguish it from *P. sulphurata.*

Along with this is the merest fragment of another *Parmelia*, which externally resembles states of *P. tinctorum*, Despr., but differs from this and all other known species by its peculiar reaction, viz. "Medulla and soredia K+, greenish black." The fragment, however, is too miserable to admit of any right diagnosis, though its unique reaction will render its identification an easy matter. I purpose naming it *P. adepta*, Cromb., n. sp.

3. GRAPHIS AFZELII (*Ach.*).

On bark of trees, very sparingly.

4. GRAPHIS TENELLA, *Ach.*, *Nyl. N. Granat.* p. 561.

On bark of trees, very sparingly.

5. GLYPHIS CICATRICOSA, f. FAVULOSA (*Ach.*), *Nyl. N. Granat.* p. 208.

On bark of trees; only a small fragment seen. (The spores are 0·030 millim. long. 0·009 millim. thick).

6. CHIODECTON RUBROCINCTUM (*Ehrnb.*), *Nyl. N. Granat.* p. 110.

On bark; sparingly seen.

7. VERRUCARIA CINCHONÆ, *Ach.* (=*V. prostans* Mut., Nyl. Pyrenoc. p. 57).

On smooth bark, very sparingly.

8. MELANOTHECA ACICULIFERA, *Nyl.*

On branches of trees, sparingly, and with the spores rarely well evolute.

KERGUELEN'S LAND.

1. STEREOCAULON CYMOSUM, *Cromb.*

On the ground; infertile.

2. CLADONIA CORNUTA (*L.*), *Fr.*

On the ground; barren.

3. NEUROPOGON MELAXANTHUS, var. CILIATA, *Nyl.*

On rocks; fertile. (A somewhat deformed and otherwise not typical state.)

4. N. TAYLORI (*Hook. fil.*).

On rocks; large and fertile specimens.

5. PANNARIA DICHROA (*Tayl.*).

On rocks; sparingly gathered.

6. LECANORA (PLACOPSIS) GELIDA (*L.*), ff. LATERITIA, *Nyl.*, et VITELLINA, *Bab.*

On rocks, sparingly; fertile.

7. L. (PLACOPSIS) MACROPHTHALMA (*Tayl.*).

On rocks; fertile.

8. L. CYPHELLIFORMIS, *Cromb.*, sp. n. Affinis *Lecanoræ jungermanniæ* (Vahl), sed thallo vix ullo, apotheciis biatorinis luteis concaviusculis marginatis (latit. 0·5 millim. vel minoribus): sporæ placodinæ solitæ, longit. 0·015–0·018 millim., crassit. 0·008–0·010 millim.

On decayed plants; only a very few apothecia visible.

9. **Lecidea disjungenda**, *Cromb. in Journ. Bot.* 1877.

10. **L. stephanodes**, *Strn.*, sp. n. Thallus albidus vel cinerascens (vel ferro tinctus ochraceus, f. *ferruginea*), tenuis, subrugulosus, continuus: apothecia nigra superficialia (latit. circiter 1 millim.), plana, crasse marginata margine obsolete radiatim rimoso-subdiffracto; sporæ 2–8næ incolores ellipsoideæ simplices, longit. 0·038–0·056 millim., crassit. 0·021–0·034 millim., paraphyses discretæ graciles, epithecium fuscescens, hypothecium cum perithecio crasse nigrum. Iodo gelatina hymenialis intensive cærulescens.

This is a very well-marked species with large spores, belonging to the section of *L. contigua.*

On rocks; only a fragmentary specimen seen.

11. **L. superjecta**, *Nyl.*, sp. n. "Parasita, apotheciis nigris superficialibus corrugato-plicatis (latit. 0·5 millim. vel minoribus), intus concoloribus: sporæ 8næ incolores ellipsoideæ simplices, longit. 0·009–0·011 millim., crassit. 0·006 millim.; epithecium angustum subincolor, paraphyses gracilescentes, hypothecium cum perithecio (etiam implicato) nigro. Iodo gelatina hymenialis cærulescens, dein vinose rubens." *Nyl. in litt.*

Parasitic on the thallus of *L. disjungenda*; only a very few apothecia seen.

12. **L. geographica** (*L.*).

On rocks, associated with other lichens.

13. **Verrucaria æthiobola**, *Ach.*

On rocks, very sparingly, along with *L. subjungenda.*

14. **V. congestula**, *Strn.*, sp. n. Apothecia nigra rugosa coarcervato-congesta, pyrenio integre nigro (latit. fere 0·7 millim.); sporæ 8næ, demum infuscatæ, breviter ellipsoideæ, submuralidivisæ, longit. 0·021–0·025 millim., crassit. 0·016–0·018 millim.; thecæ cylindraceæ, paraphyses parcæ mollissimæ. Iodo gelatina hymenialis non tincta, thecæ autem demum vinose fulvescentes.

Parasitic on the thallus of *Lecanora macrophthalma*; but probably only a *Sphæria.*

On rocks; very sparingly seen.

Marion Island.

1. **Stereocaulon** —— ?

On the ground; a mere fragment, indeterminable.

2. CLADONIA FIMBRIATA, f. COSTATA, *Flk.*
On the ground: very sparingly fertile.

3. NEUROPOGON MELAXANTHUS (*Ach.*).
On rocks: barren.

4. PELTIGERA POLYDACTYLA, f. HYMENINA (*Ach.*).
Amongst mosses on the ground: fertile.

5. CŒNOGONIUM CONFERVOIDES, *Nyl.*
Amongst mosses, &c.: sterile.

INACCESSIBLE ISLAND.

1. RAMALINA YEMENENSIS, *Ach.*
On branches of trees: fertile.

2. R. INTERMEDIA (*Del.*).
On the branches of trees: barren.

3. PARMELIA PERFORATA, *Ach.*
On trees: sterile, fragmentary and uncertain.

4. LECANORA SUBFUSCA, var. SUBGRANULATA, *Nyl. L. Antill. Husn.* p. 11.
On the bark of trees: apparently common.

ISLAND OF TRISTAN D'ACUNHA.

1. STEREOCAULON MIXTUM, *Nyl.*
On the ground: sterile.

2. STICTINA INTRICATA, f. THOUARSII (*Del.*).
On trees: with young apothecia.

3. PARMELIA PERFORATA, *Ach.*
On trees: infertile.

4. P. PERLATA (*L.*).
On trees: barren, also a sorediate state.

5. P. REVOLUTELLA, *Nyl.*, sp. n. "Est quasi *P. revoluta*, Flk., minor, thallo albido imbricato-laciniato (laciniis latit. 1–2 millimetrorum, subtus nigris, passim rhizinis concoloribus sparsis parcisque); medulla CaCl +. Apothecia non visa. Spermatia bifusiformia, longit. 0·004–0·006 millim., crassit. 0·0005 millim." *Nyl. in litt.*
On trees? very sparingly seen.

6. LECANORA (PLACOPSIS) GELIDA (*L.*).
On rock: probably frequent.

7. L. ACUNHANA, *Nyl.*, sp. n. "Thallus albidus tenuis ruguloso-

inæqualis continuus, passim rimosus (K—, I—); apothecia nigra adnata plana (latit. 0·5–0·8 millim.), marginata, parum prominula; sporæ 8næ, fuscæ, ellipsoideæ, 1-septatæ, longit. 0·010–0·012 millim., crassit. 0·006–0·007 millim.; paraphyses fere mediocres clava fusca apice incrassatæ; hypothecium fuscum. Iodo gelatina hymenialis intensive cærulescens.

"Species bene distincta videtur in stirpe *Lecideæ dispersæ* (Mass.). Spermatia oblongo-cylindrica, longit. 0·003 millim., crassit. 0·001 millim." *Nyl. in litt.*

On rocks: very sparingly seen.

ISLAND OF JUAN FERNANDEZ.

1. **LEPTOGIUM AZUREUM** (*Sw.*), *Ach.*

On trunks of trees: fertile.

2. **BÆOMYCES CHILENSIS** (*Mnt.*), *Nyl.*

On the ground: fertile. (This, in all probability, is to be regarded as a proper species, distinguished by the thin, whitish, rugulose, continuous thallus).

3. **STEREOCAULON RAMULOSUM** (*Ach.*), *Nyl.*

Apparently on the ground: a slender state, fertile.

4. **CLADIA AGGREGATA** (*Sw.*), *Nyl.*

On the ground: a young state, infertile.

5. **STICTA SUBVARIABILIS**, *Nyl. in Flora*, 1867, p. 439.

On mossy trunks of trees: infertile.

6. **S. HYPOPSILA**, *Mnt.*

On trees: sparingly fertile.

7. **S. LINEARILOBA** (*Mnt.*), *Nyl.*

On trees: very sparingly fertile.

8. **THELOTREMA** —— ?

On the bark of trees: indeterminable.

9. **URCEOLARIA SCRUPOSA**, *Ach.*

On the ground: the host of the following species.

10. **LECIDEA FERNANDEZII**, *Cromb.* Omnino est similis *L. Urceolariæ*, Nyl. in Flora, 1873, p. 298, Norrl. Fl. L. F. no. 193, differt autem hypothecio et perithecio fuscis, sporisque fere minoribus, longit. 0·010–0·014 millim., crassit. 0·004–0·006 millim. Forsan varietas *L. Urceolariæ*.

Parasitic on the thallus of *Urceolaria scruposa*.

SANDWICH ISLANDS.

1. USNEA MICROCARPA, *Pers. Uran.* p. 210; *vid. Nyl. Syn.* p. 267.

Apparently on rocks: well fruited. Haevai.

ISLAND OF TAHITI.

1. COLLEMA BYRSINUM, *Ach.*

On the trunks of trees: fertile.

2. LEPTOGIUM DIAPHANUM (*Sw.*), *Ach.*, *Mont.*

On trees: well fruited.

3. L. LACERATULUM, *Nyl.*, sp. n. "Subsimile *L. lacero*, sed thallo minus lævi et magis crispo, marginibus passim tenuiter denticulato-isidiosis vel tenuiter fibrilloso-laceris. Sterile modo visum. Fere *Stephanophoron* sit ob thallum plicatulo-rugulosum (tamen nonnihil minus quam in *L. corrugatulo* comparando)." *Nyl. in litt.*

Amongst mosses, on trees? infertile.

4. STEREOCAULON PROXIMUM, *Nyl.*

On the ground: fertile.

5. USNEA CERATINA, *Ach.*

On the trunks of trees: fertile.

6. U. TRULLIFERA, *Nyl.*, sp. n. "Differt ab *U. florida* (L.), thallo basi cortice transversim plicatulo, fibrillis ascendentibus (nec patentibus), apotheciis magnis receptaculo subefibrilloso (nec margine ciliato), sporis nonnihil minoribus, &c." *Nyl. in litt.*

On trunks of trees: fertile.

7. STICTINA CARPOLOMA (*Del*), *Nyl.*

On trees: sparingly fertile.

8. S. CAPERATA, *Bory*, *Nyl.*

On the trunks of trees: well fruited.

9. S. DICHOTOMOIDES, *Nyl.*, *Syn.* p. 355.

On trees: fertile. Alt. 4000 feet. (The specimen is not quite typical, but has the thallus smooth, and not scrobiculose).

10. PARMELIA LATISSIMA, *Fée.* (=*P. glaberrima*, Kphb. in Flora, 1869, p. 233). *Vid.* Nyl. Pyr. Or. p. 16, nota.

On trees? scarcely fertile, only a single young apothecium being visible on the specimen.

11. PHYSCIA PODOCARPA (*Bel.*), *Nyl. in Flora*, 1869, p. 322.
On branches of trees: sparingly fertile.

12. P. PODOCARPOIDES, *Nyl.*, sp. n. "Subsimilis *P. podocarpæ*, sed thallo (similiter K^{+}_{+} et medulla dein croceo-ferruginascente) subtus nigrescente, ciliis nigris (marginalibus vix ullis); apotheciis fusco-nigris nudis (in *podocarpa* cæsio-pruinosis); sporis fuscis 1-septatis (in utraque parte loculus major rotundatus et alter minutus apicalis), longit. 0·034–0·040 millim., crassit. 0·017–0·021 millim." *Nyl. in litt.*

On branches of trees: well fruited.

13. PANNARIA RUBIGINOSA (*Thunb.*).
On the bark of trees: fertile.

14. P. NIGRO-CINCTA (*Mont.*).
On branches of trees: a small specimen, but well fruited.

15. P. PANNOSA (*Sw.*), *Del.*
On trees: both fertile and sterile.

16. PERTUSARIA VELATA (*Turn.*).
On branches of trees: finely fruited.

17. LECIDEA TAITENSIS, *Mnt.*
On trees: fertile. (This is most likely a *Lecanora*, though the apothecia have not always a thalline margin. Spores 4–8næ, 0·036–0·070 millim. long, 0·022–0·027 millim. thick.)

18. L. LEUCOBLEPHARA, *Nyl. N. Gran.* p. 52.
On branches: a small specimen.

19. L. LEPTOCHEILOIDES, *Nyl.*, sp. n. "Thallus albidus, minute granulato-inæqualis, tenuis: apothecia nigra plana marginata (latit. 1–2 millim. vel minora), perithecio extus albido, intus subnigra (strato excipulari albo): sporæ 8næ, incolores oblongæ 1-septatæ, longit. 0·016–0·019 millim., crassit. 0·005–0·006 millim.; epithecium cærulescenti-nigrum, paraphyses gracilescentes, hypothecium (superius et medium) fuscum (K violaceo-purpurascens). Iodo gelatina hymenialis vinose rubescens, præcedente cærulescentia.

"A *L. leptocheila*, Tuck. (*vid.* Nyl. *N. Gran.* p. 66, et *L. Antill.* p. 14; Wright, *L. Cub.* no. 227), mox differt hypothecio alio. Spermogonia non visa." *Nyl. in litt.*

On the thin bark of trees: only a single small specimen gathered.

20. GRAPHIS ASSIMILIS, *Nyl.*
On branches: two fragmentary specimens seen.

21. GRAPHIS STRIATULA, *Ach.*

On bark: associated very sparingly with *Lecidea leucoblephara.*

ADMIRALTY ISLANDS.

1. COLLEMA (DICHODIUM) BYRSINUM (*Ach.*), *Nyl. L. Antill. Husn.* p. 4.

On trees: well fruited.

2. RAMALINA SUBFRAXINEA, *Nyl. Ramal.* p. 41.

On branches: fertile. (Spores 0·015–0·018 millim. long, 0·004–0·005 millim. thick.)

3. PYXINE ——?

On bark: sterile and indeterminable.

4. LECANORA GRANIFERA, var. LEUCOTROPA, *Nyl. L. Antill. Husn.* p. 11.

On the bark of trees: a small specimen. (Thallus K+, yellow; spores 0·014–0·016 millim. long, 0·007–0·010 millim. thick.)

5. OPEGRAPHA SUBVULGATA, *Nyl. in Flora,* 1869, p. 71.

F. *absita,* Nyl. "Differt apotheciis interdum cæsio suffusis, sporis nonnihil turgidioribus (longit. 0·023–0·032 millim., crassit. 0·006 millim., 7-septatulis). Thallus variat maculiformis pallescens aut fuscescens. Spermogonia non visa."—*Nyl. in litt.*

On branches: apparently frequent.

6. ARTHONIA POLYMORPHOIDES, *Nyl.*

On thin bark of trees: sparingly gathered. (Spores 0·016–0·022 millim. long, 0·006–0·007 millim. thick.)

7. PLATYGRAPHA STENOGRAMMA, *Nyl.*, sp. n. "Thallus albidus subopacus tenuis lævis, tenuiter nigro limitatus; apothecia nigra lineari-elongata (latit. circiter 0·15 millim., longit. sæpius 1–2 millim.), simplicia, plus minusve flexuosa, intus albida; sporæ 8næ aciculari-fusiformes 7–9 septatæ, longit. 0·030–0·035 millim., crassit. 0·004 millim., paraphyses irregulares graciles, hypothecium incolor. Iodo gelatina hymenialis dilute vinose rubescens.

Species apotheciis elongatis thallino-obductis (epithecio solo nudo) bene distincta, facie fere *Graphidis Pavonianæ.* Spermatia arcuata, longit. 0·018–0·023 millim., crassit. 0·0005 millim.

On the bark of trees: probably not uncommon.

8. GRAPHIS SCRIPTA, f. PULVERULENTA, *Ach.*

On the bark of trees: sufficiently typical.

9. G. DENDROGRAMMA, *Nyl.*, sp. n. "Affinis *G. scriptæ,* sed

apothecia cæsio-pruinosa longiora dendroideo-divisa, thallodeo-marginata; sporæ 8–10 loculares, longit. 0·020–0·030 millim., crassit. 0·006–0·007 millim."—*Nyl. in litt.*

On the bark of trees: very sparingly gathered.

10. VERRUCARIA PARAMERA, *Nyl.*, sp. n. "Thallus macula luteo-pallescente indicatus; apothecia pyrenio integre nigro, parte dimidia superiore nuda convexa prominula (latit. 0·5–0·7 millim.); sporæ 8næ, fuscæ vel fuscescentes, ellipsoideæ vel oblongo-ellipsoideæ, 6-loculares vel demum loculis quibusdam transversim divisis (ita duplicatis), longit. 0·024–0·034 millim., crassit. 0·010–0·015 millim. Iodo gelatina hymenialis dilute vinose rosello tincta.

Accedit versus *V. libricolam*, sed sporæ minores et simpliciores."—*Nyl. in litt.*

On the bark of trees: very sparingly gathered.

11. V. ALBESCENS, * SUBOCHRACEA, *Nyl.* "Differt præcipue thallo subochracee tincto; sporæ incolores vel subincolores, seriebus 4 bi- v. triloculosis, longit. 0·012–0·016 millim., crassit. 0·008–0·009 millim. Iodo gelatina hymenialis non reagens."

On thin bark: apparently frequent.

TONGATABU ISLAND.

1. LEPTOGIUM CYANIZUM, *Nyl.*

On trunks of trees: infertile. (This is described in 'Nyl. Syn.' p. 131, s. n. "*L. cyanescens*;" but this was formerly employed in 'Ach. Syn.' p. 326, as a var. of *L. tremelloides*.

2. RAMALINA SUBFRAXINEA, *Nyl.*

On branches: fertile.

3. GRAPHIS SCRIPTA, f. PULVERULENTA, *Ach.*

On bark of trees: sparingly gathered.

KOBE KIOTOS, Japan.

1. STEREOCAULON PROXIMUM, *Nyl.*

On the ground: sparingly fertile.

2. CLADONIA ADSPERSA, *Flk.*

On putrid stumps amongst mosses: fertile.

3. RAMALINA CALICARIS (*Hffm.*).

On trees?: a single small barren specimen.

4. USNEA DASYPOGA, *Ach.*
On branches: infertile.

5. RICASOLIA GLOMULIFERA (*Lghft.*).
On trunks: fertile. (The thallus does not bear the parasitic *Homodium bolacinum* (Schær.).)

6. PARMELIA SUBAURULENTA, *Nyl.*
On the trunks of trees: fertile. (This is given also in Hook. fil. & Thoms. 'Ind. Or.' no. 2003.)

7. PELTIGERA CANINA, f. MEMBRANACEA (*Ach.*).
Amongst mosses on trees? fertile.

8. PHYSCIA SPECIOSA (*Wulf.*).
Amongst mosses on trees? fertile. (The specimens are entirely typical, our European plant being referable to f. *sorediifera.*)

9. P. GALACTOPHYLLA, *Tuck.* (vid. *Flora*, 1869, p. 322).
On branches of trees: very sparingly gathered.

10. PERTUSARIA MULTIPUNCTA (*T. & B.*).
On bark of trees: fertile. (Thecæ 1-sporæ; spores 0·070–0·150 millim. long, 0·054–0·068 millim. thick.)

11. GRAPHIS SCRIPTA, *Ach.*
On branches: sufficiently typical.

Conspectus of the 'Challenger' *Lichens.*

Family BYSSACEI.

Tribe Sirosiphei.

Scytonema ——, sp. n.?

Family COLLEMACEI.

Tribe Collemei.

Collema byrsinum, *Ach.*
Leptogium laceratulum, *Nyl.* sp. n.
—— tremelloides, *Ach.*
—— azureum (*Sw.*).
—— diaphanum (*Sw.*).
—— cyanizum, *Nyl.*
Collemopsis pelia, *Strn.* sp. n.

Family LICHENACEI.

Tribe Bæomycetei.

Bæomyces chilensis (*Mdt.*).

Tribe Stereocaulei.

Stereocaulon cymosum, *Cromb.*
—— ramulosum (*Ach.*).
—— proximum, *Nyl.*
—— mixtum, *Nyl.*

Tribe Cladoniei.

Cladonia fimbriata, *Hffm.*
—— —— f. costata, *Flk.*
—— acuminata, * hebescens, *Nyl.*

Cladonia fibula (*Ach.*).
—— cornuta (*L.*).
—— sobolifera (*Del.*).
—— adspersa, *Flk.*
—— mitrula, *Tuck.*
Cladia aggregata (*Sw.*).

Tribe Roccellei.

Roccella tinctoria, *DC.*
—— phycopsis, *Ach.*

Tribe Ramalinei.

Ramalina rigida (*Pers.*).
—— complanata (*Sw.*), *Ach.*
—— subfraxinea, *Nyl.*
—— calicaris (*Hffm.*).
—— Yemenensis (*Ach.*).
—— cuspidata, var. crassa, *Del.*
—— minuscula, *Nyl.*
—— intermedia (*Del.*).

Tribe Usneei.

Usnea microcarpa, *Pers.*
—— dasypoga, *Ach.*
—— ceratina, *Ach.*
—— trullifera, *Nyl.*, sp. n.
Neuropogon melaxanthus (*Ach.*).
—— ——, var. ciliata, *Nyl.*
—— Taylori (*Hook. fil.*).

Tribe Parmeliei.

Parmelia perforata, *Ach.*
—— latissima, *Fée.*
—— perlata (*L.*).
—— tinctorum (*Despr.*).
—— revolutella, *Nyl.*, n. sp.
—— persulphurata, *Nyl.*
—— subaurulenta, *Nyl.*
—— conspersa, *Ach.*
—— glabra (*Schær.*).

Tribe Stictei.

Stictina intricata, f. Thouarsii (*Del.*).
—— carpoloma (*Del.*), *Nyl.*
Sticta pulmonacea, *Ach.*
—— damæcornis (*Sw.*).
——leariloba (*Mnt.*).
—— hypopsila, *Nyl.*
—— caperata, *Bory*, *Nyl.*
—— dichotomoides, *Nyl.*
—— aurata, *Ach.*
—— subvariabilis, *Nyl.*
Ricasolia glomulifera (*Lghft.*).

Tribe Peltigerei.

Peltigera polydactyla, f. hymenina (*Ach.*).
—— canina, f. membranacea (*Ach.*).

Tribe Physciei.

Physcia flavicans (*Sw.*).
—— leucomela (*Sw.*).
—— podocarpa (*Bel.*), *Nyl.*
—— podocarpoides, *Nyl.*, sp. n.
—— galactophylla, *Tuck.*
—— speciosa (*Wulf.*).
—— Leana, *Tuck.*
—— obsessa (*Mnt.*).
—— adscensionis (*Ach.*).

Tribe Pyxinei.

Pyxine ——, sp. ?

Tribe Lecanorei.

Pannaria rubiginosa (*Thunb.*).
—— dichroa (*Tayl.*).
—— nigrocincta (*Mnt.*).
—— pannosa (*Sw.*).
Heppia meiolepis, *Cromb.*, sp. n.
Lecanora (Squamaria) saxicola, (*Poll.*).

Lecanora (Squamaria) melanophthalma (*Ram.*).
—— (Placodium) subelegans, *Nyl.*, sp. n.
—— —— flavorubens, *Nyl.*
—— —— lepidoplacum, *Nyl.*, sp. n.
—— (Placopsis) gelida, *Ach.*
—— ——, f. vitellina, *Bab.*
—— ——, f. lateritia, *Nyl.*
—— —— macrophthalma (*Tayl.*).
Lecanora pyracea (*Ach.*).
—— cyphelliformis, *Cromb.*, n. sp.
—— subfusca, var. subgranulata, *Nyl.*
—— ——, * sylvestris, *Nyl.*
—— granifera, var. leucotropa, *Nyl.*
—— Bermudensis, *Nyl.*, sp. n.
—— Teneriffensis, *Nyl.*, sp. n.
—— chlaronella, *Nyl.*, sp. n.
—— Vincentina, *Nyl.*, sp. n.
—— glaucomodes, * conflectens, *Nyl.*
—— recubans, *Strn.*, sp. n.
—— parella, *Ach.*
Dirina repanda, *Fr.*, var.

Tribe Pertusariei.

Pertusaria multipuncta (*T. & B.*)
—— pustulata, *Ach.*
—— velata (*T. & B.*).
—— papillata (*Ach.*).
—— aleianta, *Nyl.*, sp. n.

Tribe Thelotremei.

Urceolaria scruposa, *Ach.*
—— ——, * bryophila, *Ach.*

Tribe Lecideei.

Cœnogonium confervoides, *Nyl.*
Lecidea fuscorubescens, *Nyl.*
—— heterobola, *Cromb.*, n. sp.
—— endoleuca, *Nyl.*
—— leptocheiloides, *Nyl.*, sp. n.
—— leucoblephara, *Nyl.*
—— semiusta, *Strn.*, sp. n.
—— revertens, *Strn.*, sp. n.
—— Taitensis, *Mnt.*
—— canescens (*Dcks.*).
—— epiplacodia, *Cromb.*, sp. n.
—— stephanodes, *Strn.*, sp. n.
—— distinguenda, *Cromb.*, sp. n.
—— atrobrunnea (?), *DC.*
—— Acunhana, *Nyl.*, sp. n.
—— myriocarpa, *DC.*
—— insperata, *Nyl.*
—— superjecta, *Nyl.*, sp. n.
—— Fernandezii, *Cromb.*, sp. n.
—— geographica (*L.*).

Tribe Graphidei.

Opegrapha dialeuca, *Cromb.*, sp. n.
—— subvulgata, f. absita, *Nyl.*
Platygrapha stenogramma, *Nyl.*, sp. n.
Arthonia polymorphoides, *Nyl.*, sp. n.
—— rubella, *inferiuscula, *Nyl.*
Graphis scripta, *Ach.*
—— ——, f. pulverulenta, *Ach.*
—— tenella, *Ach.*
—— assimilis, *Nyl.*
—— striatula, *Ach.*
—— dendrogramma, *Nyl.*, sp. n.
—— Afzelii, *Ach.*
—— lobata (*Eschw.*).
Chiodecton rubrocinctum (*Ehrnb.*).

Glyphia cicatricosa, f. favulosa (*Ach.*).

Tribe Pyrenocarpei.

Verrucaria æthioleola, *Ach.*
—— ruderella, *Nyl.*, sp. n.
—— paramera, *Nyl.*, sp. n.
—— albescens, *subochracea, *N.*
Verrucaria cinchonæ, *Ach.*
—— congestula, *Strn.*, sp. n.
Melanotheca aciculifera, *Nyl.*
Trypethelium cruentum (*Mnt.*).

Tribe Peridiei.

Endococcus thalamita, *Nyl.*, sp. n.

Note on the Blimbing (*Averrhoa Bilimbi*, Linn.). By R. Irwin Lynch, Esq. (Communicated by Dr. J. Murie, F.L.S.)

[Read June 21, 1877.]

I have the pleasure of bringing before the Society an instance of leaf-movement which I believe to have some physiological interest.

The leaflets of the Blimbing (*Averrhoa Bilimbi*, Linn.) are depressed to nearly the position of sleep, spontaneously, from time to time during the day. The act takes place so slowly in succession as very easily to escape observation, and to be properly seen requires the attention of some minutes. The leaflets move down with tolerable quickness, perhaps in three or four seconds, but rise again so slowly that the motion is quite imperceptible. The movement is not spasmodic, as in *Desmodium gyrans*, but is perfectly steady and continuous up to completion. One leaflet only of a leaf has been seen in downward motion at the same time, and a few only are down together. There seems not to be a strict order of rotation; a leaflet being down, the next to follow may be the one most nearly opposite, or the one next below on the same side. The terminal leaflet is often active, and appears to move without reference to those nearest to it. A leaflet has been observed to make a descent three times within half an hour. This plant, besides having a spontaneous movement throughout the day (temperature and light being favourable) is subject also to the condition of sleep, and is sensitive to mechanical irritation.

No plant has perhaps been recorded as having the three kinds of movement all evident at sight. *Desmodium gyrans* is subject to sleep, and has spontaneous movement during the day and night, but is not appreciably sensitive. *Mimosa pudica* is sensitive and subject to the condition of sleep, but is without other

immediately evident spontaneous movement. *Averrhoa* appears to be without motion during sleep; but *Desmodium* even then continues gyration.

This observation on the Blimbing has yet to be worked out, and is brought before the Society because the present [date of reading] is the last meeting for the season. The special movement was observed but a few days ago. It is probable that allied plants have something to show; and *Averrhoa* itself requires considerable time from the slow repetition of its movements, influenced as they are also by light, temperature, &c.

Contributiones ad floram Algarum aquæ dulcis Promontorii Bonæ Spei. By PAUL FREDERIC REINSCH. (Communicated by Dr. HOOKER, Pres. R.S., F.L.S.)

[Read April 19, 1877.]

(PLATE VI.)

CUM speciminibus in Insula Kerguelensi selectis accepi specimina Algarum aquæ dulcis in Promontorio Bonæ Spei autumno 1874 a cl. A. Eaton collecta. Quæ specimina consistebant in octo numeris speciminum in charta siccatorum et sex ampullulis vitreis cum speciminibus in spiritu vini asservatis. Numerus totus (sine Diatomophyceis) specierum a me inventarum in his ad inquirendum traditis speciminibus est 57; ab his sunt 16 Phycochromophyceæ et 41 Chlorophyllophyceæ. Secundum ordinem systematis adducta scrutationis summa est hæc:—

Phycochromophyceæ.

Chroococcaceæ	Spec. 5, gen. 3.
Oscillariaceæ	Spec. 4, gen. 4 (sp. n. 1).
Nostochaceæ	Spec. 1 (sp. n.).
Scytonemaceæ	Spec. 1.
Sirosiphoniaceæ	Spec. 5, gen. 1.
Rivulariaceæ	Nulla.

Chlorophyllophyceæ.

Palmellaceæ	Spec. 3, gen. 3 (sp. n. 2).
Protococcaceæ	Spec. 8, gen. 6 (sp. n. 4).
Desmidieæ	Spec. 15, gen. 5 (sp. n. 4).
Zygnemaceæ	Spec. 2, gen. 2 (sp. n. 1).
Confervaceæ	Spec. 2, gen. 2.
Chætophoraceæ	Spec. 2, gen. 2 (sp. n. 1).

Œdogoniaceæ	Spec. 2, gen. 1.
Ulvaceæ	Spec. 2, gen. 2.
Chroolepideæ	Spec. 1 (sp. n.).
Chytridieæ	Spec. 4, gen. 3.
Volvocineæ, Ulotricheæ, Gongrosireæ, Sphæropleaceæ, Vaucheriaceæ, et Rhodophyceæ.	Nulla sp.

Numerus specierum novarum inventarum est 15, ex his 2 Phycochromophyceæ et 13 Chlorophyllophyceæ.

PHYCOCHROMOPHYCEÆ.

Chroococcus turgidus, *Kützing*. Specimina bicellularia dispersa inter *Lyngbyam æruginosum*, var. Salt river. Specimina *C. chalybei*, Rabenhorst (Alg. Europ. Nr. 1144), e Saxonia Syn. =*Protococcum turgidum*, Kützing (Tab. Phyc. i. tab. 6. fig. 1, p. 5), et ab aliis locis Germaniæ maxime consentiunt cum speciminibus Africanis in magnitudine ac colore cellularum.

Glœocapsa conglomerata, *Kützing*. Cellulæ geminatæ et quaternatæ in massulas irregulares foliis *Jungermanniarum* adhærentes aggregatæ. Hæc plantula sæpe invenitur in *Jungermanniis*; specimina Africana valde consentiunt cum speciminibus Europæis.

Overhanging rocks. Summit of Table Mountain.

G. magma, *Kützing*. Indumentum cellularum obscure rubrum, lamellosum. *G. magma* repræsentat bonam speciem a *G. rupestri* indumentis tenuioribus intense coloratis sat distinctam. Specimina Europæa consentiunt. Plerumque invenitur hæc plantula in rupibus umbratis; rupes Montis Tabulæ in quibus *Chroolepus* crescebat cum maxima verisimilitate hac *Glœocapsa* sunt obtecta.

On overhanging rocks of the summit of Table Mountain.

Glœothece confluens, *Nægeli* (Gatt. einz. Alg. tab. 1. fig. 1). Longit. cell. 0·0056–0·0084 millim. Massulæ parvulæ gelatinosæ *Jungermanniis* ac *Chroolepo* Montis Tabulæ, sp. n., adhærentes.

Summit of Table Mountain.

Hydrocoleum homœotrichum, *Kützing* (*Tab. Phyc.* i. tab. 56. fig. 1). Diam. trichom. 0·0041 millim. Trichomata terna usque quaterna in fasciculos coalita, vaginis pellucidis subcrassis (crassioribus quam in icone Kützingiana). In fasciculis singulis inter radiculas *Ricciæ*.

Sp. near the Kloof road, not far from the town. Wet clay.

CHROOCOCCUS COHÆRENS, *Nægeli* (*Rabenhorst*, *Algæ Europæ*, *Nr.* 446; *Kützing*, *Tab. Phyc.*). Cellulæ quadrigeminæ, sæpe 12- et 16-geminæ. Diam. cellular. 0·0028–0·0041 millim. In plantis aquaticis inter *Spirogyram*.

Fountain, Government House.

Huc observationem insero de Alga Phycochromacea parasitica. In *Ricciæ* spec. parenchymate in speciminibus paucis in ampullula cum terra adhærente in spiritu vini asservatis observavi corpuscula a cellulis velata, quæ interdum inveniuntur in *Anthocerotis* et in *Blasiæ* parenchymate. Quæ corpuscula primo observata a cl. Hooker, postea Algas parasiticas ad *Nostochaceas* spectantes cognita. Evolutio physeumatis *Nostochidis* ex trichomate singulo impresso in lacunis aëreis in parenchymate *Anthocerotis* observabatur paucos annos ante*. Compages parasiticæ hic delineatæ non sunt compositæ ex *Nostochide*, imo vero ex *Polycocco*. Cellulæ sphæricæ absque ordine arctissime adjacentes colore obscure olivaceo-viridi 0·0028–0·0041 millim. diametro a peridermate distincto (in sectione transversali) circumvelatæ. His compagibus desunt fila unicellularia ramosa, quæ in *Blasia pusilla* colonias Nostochoideas parasitice nidulantes omni directione percurrunt et quæ prolongationes e radiculis egressas in interiorem partem plantæ versas repræsentant.

CHTHONOBLASTUS SALINUS, *Kützing*, var. Fasciculis apicibus subito attenuatis, trichomatibus spiraliter curvatis, cellulis rectangularibus diametro subæqualibus, vaginis hyalinis (non lamellosis) quam formæ typicæ vaginæ tenuioribus. Diam. trichom. 0·0028–0·0041 millim. Diam. fascic. 0·066–0·13 millim. Inter *Lyngbyæ æruginosæ*, var. *Africanæ*, cæspites in fasciculis singulis.

On mud. Salt river.

LYNGBYA ÆRUGINOSA, *Agardh.*, var. AFRICANA. *L.* trichomatibus ærugineis rigidis prolongatis in cæspitibus latissimis crasse membranaceis obscure ærugineo-viridibus dense intertextis, cellulis diametro 5plo–6plo brevioribus ad genicula lineis binis punctulatis instructis; cellulis perdurantibus raris sphæricis; vaginis hyalinis et fuscescentibus subtiliter lamellosis. Diam. trichom. (c. vagin.) 0·033 millim. Diam. trichom. intern. 0·0196 millim.

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* E. v. Zancfewski, "Zur parasitischen Lebensweise der *Nostoc ichenoides*," Botan. Zeitung, 1872, no. 5.

Hab. "Salt river. On mud at low water."

Cæspites duo maximi trichomatibus densissime intertextis, vaginis fuscescentibus et fuscis. Pulcherrimum *Chlorococcum Africanum*, sp. n., in cellulis numerosis includentes. Aliud specimen ejusdem *Lyngbyæ* siccatum eodem loco, "Salt river, brook in ditch," continet trichomata laxius intricata colore pulchre ærugineo, singulis trichomatibus *Leibleiniæ*, n. sp., obtecta. A forma typica ab oris marium borealium Europæis differt tantum trichomatibus crassioribus ($\frac{3}{5}$), vaginis crassioribus distinctius lamellosis.

Spermosira macrospora, spec. nov. *S.* trichomatibus liberis subcontortis, cellulis pallide ærugineis subsphæricis usque ellipsoidicis (ante divisionem), laxe cohærentibus, cytioplasmate subtiliter granuloso; cellulis perdurantibus sphæricis quam ceterarum cellularum diameter paulo majoribus; sporis 12is–20is seriatis, exacte sphæricis, laxe cohærentibus, quam diameter ceterarum cellularum triplo majoribus, cytiodermate crasso fusco, cytioplasmate homogeneo subtilissime punctulato. Diam. cellular. 0·0028–0·0041 millim. Diam. cellul. perdur. 0·0041–0·0056 millim. Diam. sporarum 0·0084–0·0097 millim.

Hab. In *Enteromorpha compressa, ζ. trichodi* in cæspitulis parvulis usque lineam latis.

Freshwater pool near Salt river.

Hæc plantula elegantissima nova inter *Spermosiram* et *Anabainam* est ponenda; cum *Anabainis* cellularum ac sporarum forma consentit, sed differt sporis seriatis; a *Spermosiris*, quibuscum sporis seriatis consentit, differt sporarum ac cellularum forma. Interdum plantulam ad *Spermosiram* pono donec inveniantur species aliæ adhuc pertinentes.

Leibleinia moniliformis, spec. nov. *L.* cæspitulos laxos usque lineam longos formans, trichomatibus rectis basi paulo dilatata cohærentibus intensive ærugineo-viridibus (interdum in modo *Scytonematis* pseudo-ramulis binis lateralibus), cellulis distinctis moniliformibus diametro quadruplo v. quintuplo brevioribus, cytioplasmate subtiliter granuloso, cellulis summis trichomatis in modo *Oscillariarum* articulatis, cellulis interstitialibus (sporis) in quoque trichomate compluribus ellipsoidico-sphæricis usque subsphæricis diametro ceteras cellulas æquantibus, cytiodermate subcrasso aureo-fuscescente, cytioplasmate hyalino; vaginis subcrassis hyalinis subhomogeneis, superne plerumque vacuis. Diam. trichom. (c. vagin.) 0·0278–0·0306 millim. Diam. trichom. intern. 0·0168–0·0196 millim. In *Lyngbyæ* æruginosæ, *Ag.*, var. *Africanæ*, trichomatibus et in physeumate *Enteromorphæ* compressæ.

Salt river. In a ditch.

Leibleinia æruginea (in *Polysiphoniis*, Mare Adriaticum), *L. australis* (ora Novæ Hollandiæ), *L. virescens*, et *L. flavida* differunt: cellulis omnibus oscillaroideis, cellulis interstitialibus rarioribus.

SCYTONEMA ELEGANS, *Kützing*, forma. Trichomata subcontorta, vaginæ sublamellosæ pallide fuscæ, cellulæ perdurantes crebriores subobovales. Diam. trichom. 0·0056–0·0084 millim. Trichomata subrecta, vaginæ hyalinæ subhomogeneæ decolores cellulæ perdurantes rariores. Inter alias Algas (*Penium rupestre*, *Glœocapsam magma*) inter *Chroolepum* Montis Tabulæ.

SIROSIPHON SECUNDATUS, *Kützing* (*Tab. Phyc.* ii. tab. 37. fig. 7), forma vaginis fuscis. Ramulis numerosioribus brevioribus et singulis ramulis prolongatis, cellulis laxius positis. Inter radiculas terra argillacea involutas plantularum *Ricciæ* spec. sterilis.

Kloof road, not far from the town.

S. PANNIFORMIS, *Kützing* (*Tab. Phyc.* ii. tab. 36. fig. 2), vaginis fuscis. Specimina pauca minora in *Jungermanniis*.

Summit of Table Mountain.

S. PULVINATUS, *Kützing*. Cellulis subsphæricis majoribus, cellulis trichomatis primarii pluriseriatis vaginulis internis distinctissimis fuscis. In foliis *Jungermanniæ* inter *Chroolepum* Montis Tabulæ.

Summit of Table Mountain.

Var. INTERMEDIUS (*S. intermedius*, Kützing, Tab. Phyc. ii. tab. 36. fig. 4), trichomatibus uniseriatis vaginulis internis distinctis fuscescentibus.

S. PULVINATUS, var. vaginis pellucidis decoloribus. In trichomatibus singulis inter radiculas *Ricciæ*.

Kloof road, on wet clay.

S. PULVINATUS, var. cellulis oblongis apicem trichomatum versus arctissime connexis. Diam. trichom. 0·0024–0·0278 millim. Inter alias Algas et in *Jungermanniis* inter *Chroolepum*.

Summit of Table Mountain.

S. PULVINATUS, var. Trichomatibus inæqualibus flexuosis irregulariter ramosissimis ramulis fasciculatis inæqualibus, cellulis irregulariter seriatis subangulosis intense ærugineis, vaginis subhomogeneis mediocribus aureo-fulvis. Diam. trichom. 0·0278–0·033 millim. A forma typica vaginarum colore ac cellulis angulosis irregulariter seriatis distincta forma. Inter alias Algas inter *Chroolepum* Montis Tabulæ.

Summit of Table Mountain.

S. OLIVERI, *Reinsch* (*Alg. aq. d. Ins. Kerguel.*). Latit. trichom. 0·0168–0·0196 millim. Trichomata dispersa inter alias Algas (*Glœocapsam magma*, *Scytonema elegans*, var., *Penium rupestre*, etc.) inter cæspites *Chroolepi* Montis Tabulæ.

Overhanging rocks. Summit of Table Mountain.

Hæc species in Insula Kerguelensi inventa non variare videtur. Specimina Africana paulo subtiliora consentiunt cum speciminibus Insulæ Kerguelensis et in cellularum magnitudine et in forma et dispositione.

S. ALPINUS, *Kützing* (*Tab. Phyc.* ii. tab. 35. fig. 2). Var. trichomatibus irregulariter abrupte ramosis æqualiter latis, uniseriatis, cellulis pachydermaticis arctissime connexis vaginis firmis fuscescentibus cinctis. Diam. trichom. 0·0278 millim. Inter *Jungermannias*.

Summit of Table Mountain.

In ramificationis modo ac crassitudine trichomatum ac cellulis uniseriatis pachydermatis hic *Sirosiphon* cum *S. saxicola*, mihi tantummodo ex delineatione Kunzingiana noto, aliqua similitudine consentit, sed differt cellulis angustioribus, vagina crassiore.

CHLOROPHYLLOPHYCEÆ.

PALMELLA BREBISSONII, *Kützing*. Familiæ minores irregulares, cellulis sphæricis homogeneis singulis. Diam. cellular. 0·0022–0·0028 millim. In *Chroolepi* Montis Tabulæ filis.

Summit of Table Mountain.

Ex *Palmellis* viridibus *P. Brebissonii* et *botryoides* inveniuntur in ligneis putrescentibus humi jacentibus et in cavernis humidis crescentes, ceteræ *Palmellæ* virides in aquis stagnantibus ac in vitreis fenestris caldariorum occurrunt. *P. botryoides* cellulis fere duplo majoribus format thallum plurimum expansum, gelatinosum, ætate provectiore tuberculosum.

SCENEDESMUS QUADRICAUDATUS, *Corda*. Inter *Spirogyram*.

In the fountain at Government House.

Forma communis major cellulis externis spinis divergentibus, et forma minor cellulis externis spinis ternis armatis.

S. ACULEOLATUS, spec. nov. *S.* cellulis oblongo-cylindricis utroque polo obtuso-rotundatis, spinulis compluribus brevioribus absque ordine dispositis armato. Longit. fam. 4-cellularis 0·0196 millim. Latit. cellular. 0·013–0·0168 millim. Specimina singula observata inter *Spirogyram*. Pl. VI. figs. 1 & 2.

In the fountain at Government House.

Propter cytiodermatis proprietatem, hunc *Scenedesmum* esse propriam speciem certissime puto. In *Scenedesmis* dimensiones ac formæ cellularum observantur majore variabilitate quam in aliis *Protococcis*, qua de causa hæc propria ad definiendas *Scenedesmi* species minore momento se offerunt.

STAUROGENIA CUBICA, spec. nov. *S.* cœnobio rectangulari ex stratis cellularum duobus composito, cellulis minimis subovalibus regulariter seriatis. Longit. cœnobii 0·0168 millim. Latit. cœnobii 0·013 millim. Diam. cellular. 0·0041 millim. In cœnobiis sparsis inter *Spirogyram*. Pl. VI. figs. 15 & 16.

In the fountain at Government House.

POLYEDRIUM MUTICUM, *A. Braun*, forma. *P.* cellulis triangularibus, angulis obtuso-rotundatis, marginibus lateralibus rectis. Latit. 0·0224 millim. In speciminibus singulis inter *Spirogyram*.

In the fountain at Government House.

CŒLASTRUM SCABRUM, spec. nov. *C.* familiis cubicis et sphæricis, cellulis sphæricis verrucis 3-is–6-is firmis truncatis regulariter dispositis apice punctulatis instructis. Diam. cellular. 0·0097 millim. Diam. fam. 8-cellularis 0·0196 millim. Diam. fam. 16-cellularis 0·0333 millim. Inter *Spirogyram* in familiis singulis.

In the fountain at Government House.

C. VERRUCOSUM, *Reinsch*, *Contributiones*, p. 77 (*Chlorophyl.*), tab. xii. fig. 8. Persimile, differt verrucis tenuioribus pluribus irregulariter dispositis.

Chlorococcum Africanum, spec. nov. *C.* e maximis, cellulis singulis sphæricis colore intensive aurantiaco-fuscescente; cytiodermate extrorsum distincte subtilissime lamelloso; cytioplasmate subtiliter granuloso (plerumque cellulis filialibus? 4-is minoribus dispersis inclusis). Diam. cellular. 0·118–0·144 millim. Crassit. cytioderm. 0·0028–0·0041 millim. Inter *Lyngbyæ æruginosæ,* var., cæspites in cellulis numerosis.

Salt river. On mud when the tide is out.

Ex omnibus hucusque cognitis *Chlorococcis* maxima species. *Chlorococcum Wimmeri,* Rabenh. (*Protoccoccus Wimmeri,* Hilse, in Rabenh. Algæ Europæ, Nr. 1031), proxima species (maxima hucusque cognita), cellulis intensive coccineo-aurantiacis (diametro 0·0504–0·0615 millim.), cytiodermate crassissimo plurilamelloso, in fodinis margaceis periodice aqua repletis in Silesia a clar. Hilse detectum, differt ab hac specie nova cellulis duplo minoribus, cytiodermatis structura diversa ac cytioplasmatis diverso colore. Cytioderma exterius cellularum componitur ex stratis binis distinctissime limitatis substantia interposita hyalina subtilissime lamellosa. Cytioderma exterius *C. Africani* ex strato uno componitur lamellulis subtilissimis interpositis.

Botryococcus giganteus, spec. nov. *B.* libere natans, thallo subellipsoidico in lateribus omnibus clauso, cellulis prismaticis subcuneiformibus apicibus late obtuse rotundatis arctissime se adtingentibus, cytiodermate crasso (in latere exteriore cellularum paulo incrassato), cytioplasmate granulis dense repleto. Longit. thalli 0·218 millim. Latit. thalli 0·163 millim. Longit. cellul. 0·0278 millim. In speciminibus singulis inter *Spirogyram insignem.*

In the fountain at Government House.

Hic *Botryococcus* a *B. Braunii* cellulis prismaticis dimensionibus cellularum duplo majoribus sat distincta species.

Pediastrum pertusum, *Kützing.* 8-clathratum. Cœnobia singula cellulis secundum ordinem 1, 5, 10, dispositis, cellulis marginalibus usque infra medium longitudinis cellulæ incisis, cornulis rectis. Inter *Spirogyram insignem.*

In the fountain at Government House.

Palmoglœa macrococca, *Kützing.* Latit. cellular. 0·013–0·0168. In massulis parvulis in *Jungermanniis* et in filis *Chroolepi* Montis Tabulæ, sp. n., adhærentibus. Inter radiculas *Ricciæ.*

Kloof Road, Cape Town.

PALMOGLŒA CHLAMYDOSPORA, *De Bary*, var. MINOR. Latit. cellular. 0·0068 millim. Latit. zygosporæ evolutæ 0·0196 millim. A speciminibus Erlangensibus dimensionibus omnium partium duplo plus minoribus distincta forma, sed in formac ellularum ac zygosporæ æqualis; zygospora quadrangularis, marginibus aut tantum marginibus duobus oppositis emarginatis. In speciminibus singulis capulatis inter *Zygnema tetraspermum* in ampulla signata.

"On the summit of Table Mountain in rain-pools."

PENIUM BREBISSONII, *Kützing*. Longit. 0·033–0·084 millim. Latit. 0·0168 millim. In chartæ particula collectioni adita massulæ expansæ erant compositæ ex hac specie.

Cape Flats.

P. RUPESTRE, *Kützing* (*Trichodictyon rupestre*, Tab. Phyc. i. tab. 26. fig. 1). Latit. cellul. 0·0112–0·013 millim. Longit. 0·0168–0·0196 millim. In massulis gelatinosis inter *Jungermannias* et *Chroolepum* Montis Tabulæ, sp. n.

Summit of Table Mountain.

COSMARIUM PARVULUM, *Brébisson* (*Liste des Desmid.* p. 133, tab. i. fig. 18, tab. vii. fig. 21). Forma semicellulis a fronte visis marginibus lateralibus emarginatis, lobulis basalibus paulo productis rotundatis extrorsum se adtingentibus, margine terminali levissime inciso. Longit. 0·0305 millim. Latit. 0·013 millim. Inter *Spirogyram*.

"From a fountain in the grounds of Government House," in speciminibus singulis.

C. HAMMERI B, INTERMEDIUM, *Reinsch* (*Gen. et Spec. Nov.*, *Acta Senckenberg*. vol. vi. 1867, p. 7, tab. iii. B, fig. 1, 2, 3, 5; C. HOMALODERMUM, *Nordstedt*, *Desmid. Arctoæ. Vetensk. Akadem. Förhandl. Stockholm*, 1875, p. 18, tab. vi. fig. 4). Longit. 0·0252–0·0306 millim. Latit. 0·0252–0·0278 millim. Marginis terminalis latitudo dimidium (et paulo minus) diametri transversalis, isthmi latitudo triens diametri transversalis. Sicut in specimine in 'Desmid. Arctois' delineato cytioderma in isthmi angulo subincrassatum. Pl. VI. fig. 4.

Hæc forma maxime consentit cum speciminibus Germanicis et cum *C. homalodermo*, Nordstedt. Forma D, *octogibbosum*, prius descripta, quam nunc speciem propriam puto, est disjungenda a *C. Hammeri*. Nomen speciei antea inventæ et descriptæ retinerem.

P.F.Reinsch, del.

LINN SOC. JOURN BOT. VOL. XVI. PL. VI

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J.N.Fitch lith.

FRESH WATER ALGÆ

Fitch imp

COSMARIUM ABNORME, *Nordstedt* (*Desmid. Spetsberg. et Beerens Eiland. Akad. Förhandl. Stockholm.* N. 6. p. 32, tab. vi. fig. 15), var. TRIQUETRUM. Longit. 0·0363 millim. Latit. 0·0278 millim. Specimina a fronte visa in dimensionibus ac in forma maxime consentiunt cum icone Nordstedtiana; speciminum Africanorum e vertice visorum anguli minus rotundati marginesque laterales in medio subrecti aut levissime tumidi. Pl. VI. figs. 5 & 6.

"In a rain-pool on the Cape Flats, near Claremont," schedula in ampullula.

C. PUNCTULATUM, *Brébisson* (*Liste des Desm.* p. 129, N. 24, tab. i. fig. 16). Longit. 0·0248 millim. Latit. 0·0224 millim. Cellularum cytioderma verruculis punctiformibus absque ordine dispositis subtiliter verruculosum. Certissime species propria, nullo modo *C. margaritiferi*, Meneghini, forma juvenilis. Inter *Spirogyram*. Pl. VI. fig. 7.

In a fountain in the grounds of Government House.

C. PLICATUM, *Reinsch*, B, MINUS (*Sp. et Gen. nov., Acta Senckenberg.* vol. vi. p. 6, tab. iii. C, fig. ii. 1, 2, 3.—C. sinuosum, *Lundell, Desmid. Suec.* p. 47). Longit. 0·0393 millim., latit. 0·0224 millim., latit. isthmi 0·0112 millim. Cellulæ polis paulo impressis, cytiodermata (speciminum vacuorum) margine subtiliter longitudinaliter striato. Maxime consentit et in magnitudine et in forma semicellularum cum formæ B (*minus*) speciminibus Erlangensibus margine terminali plerumque subrecto.

C. PULCHERRIMUM, *Nordstedt* (*Desmid. Ins. Spetsberg et Beerens Eiland, K. Vetenskap. Akad. Förhandl. Stockholm*, 1872, p. 32, tab. vi. fig. 14). Longit. 0·0421 millim., latit. 0·0333 millim., latit. isthmi 0·0084 millim. Cellularum superficies in media parte punctulato-verruculosa, margines laterales 5–6 gibberulis verruculosis instructi, verruculæ marginum indistincte radiatim dispositæ. *Cosmaria* compluria a clar. Nordstedt descripta ;—*Cosmarium subspeciosum, pycnochondrum, costatum, subreniforme, pulcherrimum,* maxima versimilitudine mihi videntur formæ cohærentes unius speciei.

C. PULCHERRIMUM ? *Nordst.*, forma cellulis ellipticis diametro transversali tres quintas diametri longitudinalis æquante, semicellulis semicircularibus, marginibus æqualiter crenato-incisis introrsum verruculis radialiter positis verrucosis ; isthmi latitudo quarta pars diametri transversalis, longit. 0·0306 millim., latit. 0·0196 millim. Pl. VI. fig. 8.

In a rain-pool on the Cape Flats near Clermont.

COSMARIUM ASPERULUM, spec. nov. *C.* e minoribus, diametro transversali $\frac{3}{5}$ diametri longitudinalis, semicellulis subtrapezicis, nucleo amylaceo singulo, marginibus lateralibus obtusangule subincisis, margine terminali subrecto, lobulis basalibus rotundatis introrsum se adtingentibus, extrorsum aculeolis brevioribus (sicut margine terminali) armatis. Longit. 0·0224 millim., latit. 0·0116 millim. Pl. VI. fig. 9.

In a rain-pool on the Cape Flats near Clermont.

Cum *Cosmario protumido,* Norstedt (Desmid. Spetsberg. et Beerens Eiland, p. 34, tab. vii. fig. 18), in forma semicellularum aliqua similitudine consentit, ad contra margine terminali undato-inciso aculeolis marginum lobulorum crassioribus subregulariter positis.

COSMARIUM, spec. nov. *C.* e minimis, diametro transversali duæ partes diametri longitudinalis, semicellulis subtrapezicis, basi se adtingentibus, margine terminali recto, diametri transversalis dimidio paulo minus, angulis basalibus rotundatis, cytiodermate laevi ; isthmi latitudo triens diametri transversalis. Longit. 0·0168 millim., latit. 0·0112 millim., forma major, longit. 0·0196 millim., latit. 0·0153 millim. Inter *Spirogyram.* Pl. VI. figs. 10 & 11.

In a fountain in the ground of Government House.

Hoc *Cosmarium* jacet inter formam typicam *Cosmarii Hammeri* (Reinsch, Act. Senckenb. tab. 3 B. fig. 1–8) et formas minores *Cosmarii Meneghinii,* Brébisson.

EUASTRUM SUBINCISUM, spec. nov. *E.* e minoribus, in sciagraphia rectangulari incisura acutangula divisum ; semicellulis a fronte visis rectangularibus, trilobulatis, lobulis basalibus subrotundatis, in quoque latere gibberulo rotundato instructis, lobulo terminali lato a lobulis basalibus incisura rotundata disjuncto, margine terminali subrecto, in medio levissime inciso diametrum transversalem cellulæ subæquante, angulis rotundatis ; semicellulis e latere et e vertice visis rectangularibus, marginibus leniter emarginatis in quoque angulo gibberulo rotundato instructis ; cytiodermate lævi ; isthmi latitudo et corporis crassitudo dimidium diametri transversalis. Longit. 0·0224 millim., latit. 0·0178 millim. In speciminibus singulis. Pl. VI. fig. 12.

Cape Flats in a ditch near Clermont.

Euastrum venustum, Hantsch, paulo majus persimile, differt margine terminali inciso, lobulis basalibus se adtingentibus.

Staurastrum margaritaceum, *Ehrenberg*. Trigonum. Longit. 0·0278 millim., latit. 0·0393 millim. Pl. VI. figs. 13 & 14.

In a rain-pool on the Cape Flats near Claremont.

Anguli in cornulis producti sicut in speciminibus Europæis, furcati aculeolati; in dimensionibus cum speciminibus trigonis Erlangensibus maxime consentiunt.

S. exiguum, sp. nov. *S.* minimum, tam longum quam latum, sinu acutangulo; semicellulis ellipticis, margine terminali æqualiter curvato, angulis acutiusculis subrotundatis, e vertice visis trigonis marginibus lateralibus subrectis et leviter repandis, angulis (plerumque) alternantibus obtusis, verruculis in seriebus dispositis. Latitudo isthmi dimidio diametri transversalis paulo minor. Longit. 0·0196 millim., latit. 0·0196 millim.

In a rain-pool on the Cape Flats near Clermont.

Hoc *Staurastrum*, quod speciem propriam putarem, inter *S. punctulatum* et formas minores *S. margaritacei* jacens differt a primo angulis gracilioribus truncatis (non rotundatis), a *margaritaceo* dimensionibus minoribus ac angulis integris (non aculeolatis). Eandem speciem observavi prope Erlangam ; specimina ab hoc loco dimensionibus paululo majoribus sinu paulo profundiore et latiore.

Spirogyra insignis, *Hassal* (*Kützing, Tab. Phyc.* v. tab. 31. f. 4), b, forma conjunctiva : elongata. Suringar (*Observ.* p. 16, tab. i. ; *A. Rabenhorst. Fl. Europ. Alg.* ii. p. 236.). Latit. cellul. 0·0393 millim. Longitudo 8–12plum latitudinis.

From a fountain in the grounds of Government House.

Ampullula cum speciminibus in spiritu vini asservatis et specimina duo siccata.

Zygnema tetraspermum, spec. nov. *Z.* pallide viride, cellulis sterilibus et fructiferis æqualibus diametro 4plo–5plo longioribus geniculis planis (non constrictis), cytiodermate tenui, cytioplasmate hyalino homogeneo corpusculis chlorophyllaceis sphæricis binis ; copulatione et scalariformi et una cellula cum laterali ; zygosporis evolutis subsphæricis usque subtetraedricis sporodermate tenui subtiliter punctulato fuscescente, cytioplasmate ex corpusculis chlorophyllaceis quaternis distinctissimis nucleolis singulis instructis formato. Diam. cellular. 0·0168–0·0196 millim., diam. (medius) zygosporæ 0·0306 millim., diam. corpusc. chlorophyll. 0·0084–0·0112 millim. Pl. VI. figs. 17, 18, 19, 20.

"The summit of Table Mountain, in rock-pools of rain-water."

Ampullula cum speciminibus in spiritu vini asservatis ac specimina siccata. Fila omnia in statibus omnibus copulationis.

Hoc *Zygnema, Zygnemati Vaucherii* in cellularum sterilium structura persimile, differt cellulis fructiferis cellulis sterilibus æqualibus (nec inflatis), zygosporæ structura (sporodermate non lacunoso-punctato) ac dimensionibus ($\frac{2}{3}$) minoribus. E ceteris *Zygnematibus* consentit in cellularum dimensionibus cum *Zygn. subtili*, Kützing (Tab. Phyc. v. tab. 16. fig. 1, quod certissime tantummodo varietatem *Zygn. Vaucherii* repræsentat).

Conferva lævis, *Kützing* (*Tab. Phyc.* iii. tab. 43. fig. 2). Diam. cellular. 0·0056 millim. Longitudo cellularum duplum et triplum latitudinis, cytioderma subcrassum. A ceteris *Confervis* tenuioribus, *tenerrima, rhypophila, glaciali, subtili, nubecula, abbreviata, Funkii, flaccida, floccosa, fugacissima*, e quibus nonnullæ formæ cohærentes unius speciei, haud difficile cognoscenda species cytiodermate subcrasso. In filis dispersis inter *Zygnema tetraspermum*, spec. n.

In rain-pools at the summit of Table Mountain.

Choreoclonium procumbens, *Reinsch*, forma 3 (*Reinsch, Contributiones*, p. 77, tab. iv. fig. A). Latit. cellular. 0·5–0·8. Fila pauciora subramosa et absque ordine disposita et parallela, ramulis brevioribus laxius aut densius positis. In plantis aquaticis inter *Spirogyram* una cum *Protodermate viridi* et *Limnodictyo*, spec.

In a fountain at Government House.

Plantula quoque inventa in Insula Kerguelensi, in *Nitella Hookeri* crescens, differt a plantulis Promontorii Bonæ Spei filis parenchymatice intertextis, ac consentit cum plantula Europæa, fig. B, in Contrib. delineata.

Limnodictyon, spec. *L.* plantis aquaticis affixum, cellulis circularibus absque ordine laxe parenchymatice cohærentibus, cytiodermate subcrasso. Diam. cellular. 0·0084–0·0097 millim. In plantis aquaticis cum *Choreoclonio* et *Protodermate viridi*, inter *Spirogyram*. Pl. VI. fig. 21.

In a fountain at Government House.

Certissime nonullæ plantulæ in plantis aquaticis crescentes ad *Limnodictyon* spectant. Species una hucusque cognita (*L. Roemerianum*) cum thallodibus natantibus ex cellulis angulosis pachydermis constituta, differt cellulis multo (5plo) majoribus.

Cladophora setiformis, *Kützing* (*Tab. Phyc.* iv. tab. 58. fig. 4), var. pachyderma. Fila valde elongata integerrima basi ramulis sparsis brevioribus, usque pedalia (et longiora), cellulis nodulis incrassatis pachydermis, inferioribus diametro usque duplo superioribus triplo v. sextuplo longioribus. Latit. cellular. 0·112–0·1235 millim., crassit. cytiodermatis 0·0168–0·0224 millim.

Salt River near Cape Town.

Specimina duo siccata. E *Cladophorarum* numerosarum speciebus paucioribus filis integris (*Cl. insignis, setiformis, linoides, calida, hyalina, sordida, margaritifera, lacustris, globulina*) hæc *Cladophora* pertinet ad *Cladophoram setiformem* (Cayenne, Le Prieur coll.).

CHROOLEPUS MONTIS TABULÆ, spec. nov. *C.* e maximis, cæspitulis dense fasciculatis usque 20 millim. altis, colore (siccatis) pallide rufo-virescente; filis subintegris stricto-erectis ramis sparsis erectis summis paululo incrassatis, cellulis rectangularibus et cylindricis diametro triplo usque quadruplo longioribus, cytiodermate crasso lamelloso, superficie striis subtilibus decussatis subtorulosa; sporangiis sessilibus lateralibus regulariter sphæricis. Filorum latit. (c. cytiodermate) 0·0168–0·0224 millim. Diam. sporang. 0·0393–0·0448 millim.

Hab. "Under overhanging rocks on the summit of Table Mountain."

In consortio *Jungermanniarum* minorum complurium. Hæc species nova *Chr. flavo*, Kützing (Tab. Phycol. iv. tab. 96. fig. 1), proxima, in cellularum forma, cytiodermatis crassitudine ac structura, sed differt omnium partium dimensionibus duplo minoribus zoosporangiis ovalibus.

Hab. in arboribus Chili et Peru.

PROTODERMA VIRIDE, *Kützing.* Specimina minora ex cellulis angulosis constituta in fragmentis plantarum aquaticarum (*Callitriche*?) inter *Spirogyram* exacte consentiunt cum speciminibus Germanicis ac cum speciminibus ex Insula Kerguelensi.

In a fountain at Government House.

Œdogonia duo in plantis aquaticis crescentia non sunt exactius determinanda propter penuriam oosporangiorum et oosporarum. Secundum cellularum dimensiones ac cellulæ basalis formam, *Œdogonium* unum cellulis basalibus breviter cuneiformibus filis basi attenuatis ad *Œdogonium nodosum*; *Œdogonium* alterum cellulis basalibus subcylindricis, cellulis omnibus æqualiter latis, ad *Œdogonium Rothii* spectat.

MICROTHAMNION EXIGUUM, spec. nov. *M.* filis erectis ramosis et subintegris subtilissimis indistincte articulatis, ramulis lateralibus integerrimis sparsis erectis apicibus paulo incrassatis, cellulis subtilissimis, cytioplasmate pallide viridi granulis majoribus instructo. Diam. filorum 0·0011–0·0026 millim. In plantis aquaticis (*Callitriche*) inter *Spirogyram*.

In a fountain at Government House.

A *Microthamnio* Kutzingiano et strictissimo filis subintegris tenuioribus ramulis integerrimis, a *M. cladophoroidi* (Alg. aq. d. Insulæ Kerguel.) filis multo tenuioribus ac modo ramificationis distinguitur.

ENTEROMORPHA COMPRESSA, *Gréville*, ζ. TRICHODES, *Kützing*.

In a freshwater pool near Salt river.

Physeumatis ramulis adhærent cæspituli *Spermosiræ macrospermæ*, spec. nov.

RHIZOPHYDIUM, spec. *R.* parasiticum cellulis sphæricis aggregatis orificiis plerumque binis (interdum singulo). Diam. cellular. 0·0112–0·0013 millim. Hab. in granulis pollinis (Abietinarum?).

In a rain-pool on the Cape Flats near Claremont.

Hæc plantula parasitica orificiis binis haud dubio ad *Rhizophydium* spectat. *R. transversum* (*Chytridium transversum*, Al. Braun) in *Chlamydomonade Pulvisculo* et in *Gonio* nidulans in magnitudine et forma cellularum simile, differt cellulis evolutis transverse ellipticis; *R. globosum* dimensionibus multo majoribus. Contentus ampullulæ exhibens granula pollinis numerosa e Phanerogamis variis, tantummodo granulum unicum observabatur a parasita infectus. In cytioplasmate granuli est imposita cellula singula sphærica cytiodermate crasso, cytioplasmate dense granuloso; utrum in connexione organica cum cellulis parasiticis extrorsum insidentibus?

RHIZOPHYDIUM, spec. *R.* cellulis transverse ellipticis cohærentibus, orificiis binis aut ternis subtilissimis, cytiodermate crasso, radiculis nullis. Latit. cellular. 0·0056 millim., longit. 0·0112 millim. In *Œdogoniis* in plantis aquaticis inter *Spirogyram* affixis.

In a fountain at Government House.

Hæc plantula consentit cum parasita minuta non descripta in 'Tabulis Phycologicis' delineata in *Mougeotia genuflexa* crescente (Kützing, Tab. Phyc. v. tab. 1. fig. 3, filum dextrum).

OLPIDIUM, spec. *Ol.* epiphyticum, cellulis subsphæricis arctissime conjunctis fila breviora integra formantibus, tubulo erecto tenuissimo breviore, seta singula ex tubulo orta. Diam. cellular.

0·0084 millim. Hab. in *Spirogyra* insigni et in *Œdogoniis*; in speciminibus paucis observatum.

Hoc *Olpidium* aliqua similitudine consentit cum *Chytridio caudato* in *Schizosiphonte Kerguelensi* (ab Insula Kerguelensi) crescente, sed differt cellulis regulariter sphæricis paulo majoribus, collo cellulæ longiore, seta cytiodermatis crassiore. Possidere propinquitatem genericam plantulam Kerguelensem cum plantula Africana certe affirmare non possum.

Characium coronatum, spec. nov. *C.* cellulis (ante zoogonidiis egressis) oblongo-ellipticis basi angustissime attenuata, apice subito in tubulum brevem extrorsum radialiter dilatatum producto, cellulis post zoogonidiis egressis cyathiformibus. Longit. cellular. 0·0196–0·0224 millim., latit. cellular. 0·0041 millim. Hab. in *Œdogonio* in plantis aquaticis inter *Spirogyram.*

In a fountain at Government House.

Chlorochytrium, spec. Cellulæ intercellulares et intercellulares? sphæricæ in parenchymate plantarum aquaticarum (*Callitriche*) nidulantes, cytiodermate subtenui, cytioplasmate dense granuloso pallide viridi, ætate provectiore processus breviores aut singuli aut complures evoluti. Diam. cellular. 0·0168–0·0252 millim.

In a fountain at Government House.

? Chlorochytrium, spec. Cellulæ subcylindricæ cytiodermate tenui, cytioplasmate viridi granulis dense positis repleto. Longit. 0·195 millim., latit. 0·0504 millim. In parenchymate plantarum aquaticarum.

In a fountain at Government House.

Hæc cellula dubia tantummodo in specimine singulo observata mihi proxima videtur *Chlorochytrio.* Status delineatus cellulæ certissime est inexplicitus. Denique adjungam observationem de glyphis fungi in *Chroolepi* Montis Tabulæ filis crescentibus, quas ejusdem generis puto, cum glyphis erysibeis *Chroolepi* in 'Contributionibus' meis, p. 96, tab. v. (Fungi) fig. 3, delineatis et descriptis simul cum sporocarpio explicito. Glyphæ steriles circum circa *Chroolepi* fila procurrentes diametro paulo tenuiore speciminibus Europæis (in *Chroolepo* aureo a Monte Watzmann Bavariæ 6000 ped. et a Com. Tirol.).

DESCRIPTIO TABULÆ VI.

Fig. 1. *Scenedesmus aculeolatus*, Reinsch. Familia 4-cellularis, × $\frac{720}{1}$.

2. *S. aculeolatus*, cellula singula maxime aucta, × $\frac{1440}{1}$.

Fig. 3. *Cœlastrum verrucosum*, Reinsch. Familia sphærica ex cellulis 16 constituta.

4. *Cosmarium Hammeri*, Reinsch, var. Specimen majus, a fronte, $\times \frac{720}{1}$.

5. *C. abnorme*, Nordstedt. Specimen a fronte, $\times \frac{720}{1}$.

6. *C. abnorme*, var. *trigonum*, $\times \frac{720}{1}$. Aliud specimen, a vertice.

7. *C. punctulatum*, Brébisson. Specimen a fronte, $\times \frac{720}{1}$.

8. *C. pulcherrimum*, Nordst. Specimen a fronte, $\times \frac{720}{1}$.

9. *C. asperulum*, Reinsch. Specimen cum cytioplasmate, $\times \frac{720}{1}$.

10. *Cosmarium*, spec. nov. Specimen formæ minoris cellula in statu divisionis, $\times \frac{720}{1}$.

11. *Idem*. Specimen formæ majoris, $\times \frac{720}{1}$.

12. *Euastrum subincisum*, Reinsch. Cellula vacua, a fronte, $\times \frac{720}{1}$.

13. *Staurastrum margaritaceum*, Ehrenberg. Specimen, a fronte, $\times \frac{720}{1}$.

14. Aliud specimen, a vertice, $\times \frac{720}{1}$.

15. *S. exiguum*, Reinsch. Specimen a fronte, $\times \frac{720}{1}$.

16. Aliud specimen, a vertice, $\times \frac{720}{1}$.

17. *Zygnema tetraspermum*, Reinsch. Fila duo in statu secundo copulationis, zygosporæ modice evolutæ; cum cystiodermate distincto limitato simpliciter striato; limina cellularum copulatarum cystioplasmate perfecte vacua, $\times \frac{360}{1}$.

18. *Z. tetraspermum*. Ultimus status cellularum fili copulatione laterali zygosporis in lumine processuum copulativorum subevolutis cytiodermate distincto limitatis, $\times \frac{360}{1}$.

19. *Z. tetraspermum*. Fili sterilis pars, $\times \frac{360}{1}$.

20. *Z. tetraspermum*. Zygospora evoluta magis aucta, nucleis chlorophyllaceis sphæricis regulariter positis, $\times \frac{720}{1}$

21. *Lymnodictyon*, spec. nov., Reinsch. Specimen majus ex cellulis cytioplasmate repletis constitutum, $\times \frac{720}{1}$.

On the Peculiarities and Distribution of Rubiaceæ in Tropical Africa. By W. P. Hiern, M.A., F.L.S., &c.

[Read June 21, 1877.]

(Plates VII. & VIII.)

Preliminary Remarks.

The only general account of the Rubiaceæ of Tropical Africa that has hitherto appeared, professing to deal with the general bearings of the Order in this region and comparing the more remarkable points here with those in other parts of the world, is to be found in the fifth volume of the Memoirs of the Society of Natural History of Paris, from the pen of Mons. A. Richard. This is a memoir on Rubiaceæ, and contains a general description of the family for the whole world and the characters of the genera which compose it. The paper was read before the Royal Academy of Sciences of Paris on July 7, 1829, and was printed in the year 1829 or not later than 1830, but was not actually published until the year 1834; on pages 116–118 he gives a special account of the geographical distribution and general characters with the predominant genera of Rubiaceæ in the middle or intertropical region of Africa. Only a small proportion, however, of the species which are now known to occur in Tropical Africa appear to have been known to Richard. The genera of Rubiaceæ, as well for Tropical Africa as for the rest of the world, have been latterly set in order and described in the first part of the second volume of Bentham and Hooker's 'Genera Plantarum,' published in the year 1873. The new genera, described for the first time therein, have been all credited to Sir J. D. Hooker, with the exception of two genera, which have been taken up from Welwitsch's manuscripts. This work has been for the most part followed by me for the purposes of classification; the few departures that I have felt obliged to make from this main guide to the Order are not necessary to detail in this place.

Having recently drawn up descriptions of the plants of this Order for the third volume of the 'Flora of Tropical Africa,' this portion of the volume having already been printed off, I propose to lay before the Society a general sketch of the principal results, and to give at the same time some particulars which the plan of the 'Flora' does neither require nor allow.

There are described in the 'Flora' 478 species arranged under 80 genera, besides a species of *Vaillantia* and a few species which are either imperfectly known or only incidentally mentioned. To this number must also be added one old and two new species (which are herein described and figured), but which I was not acquainted with in time to include them in the volume, and also a considerable number of new species collected by Welwitsch in Lower Guinea, most of which, though seen by me, it has been found impossible to include. When these additions have been made, it will result that the species of Rubiaceæ already in our collections amount to no less a number than 550. The materials that have served for the base of my investigations as illustrative of and supplementary to the information derivable from botanical books, were the herbaria of Kew and of the British Museum, the collection of Afzelius, made at Sierra Leone and belonging to the University of Upsala, and the greater part of the Rubiaceæ collected by Dr. Peters in Mozambique, kindly lent from the Berlin herbarium for the purpose of the 'Flora.' The specimens available from these sources are the results of the labours of above a hundred collectors, and the sum of the number of species gathered by each of the collectors amounts to above thirteen hundred. The largest number of species collected by any one person is 175, that is, $\frac{7}{22}$ of the whole number of species hitherto known to occur in Tropical Africa, all of these species having been obtained in Upper Guinea by Gustav Mann.

On comparing the number of species belonging to Rubiaceæ with the numbers already ascertained to belong to other large natural Orders, it appears that in Tropical Africa Rubiaceæ is the Order of flowering plants second in size, it being rather more numerous in species than Compositæ and exceeded only by Leguminosæ. It must, however, be borne in mind that when the specimens of Compositæ gathered by Welwitsch in Angola have been determined, they will perhaps augment the number of species of the latter Order so as to outnumber Rubiaceæ. At the same time, from my acquaintance with these natural Orders in Tropical Africa, I should expect that the results of future collections to be made in this region will be likely to add more species to Rubiaceæ than to Compositæ; indeed this expectation is confirmed by the fact that three additional species of Rubiaceæ require to be included in these pages, whereas I should at this time have not even one such species to add if I were writing similar notes on Compositæ. The variations evidenced in the organs of our Rubiaceæ are very numerous, and though often by no means conspicuous, yet are dependent on such characters that it seems impossible to disregard their specific importance; and in this manner the number of species, many of them apparently quite local, is quickly increased. Dr. Schweinfurth, in his book of travels in the interior of Africa, speaks of "the endless varieties of the Rubiaceæ" (vol. i. p. 506, English edition), and there is no doubt but that many more species remain to be discovered in that country.

The number of Gramineæ in Tropical Africa has not been ascertained, and is difficult to estimate, but I believe that it will not exceed that of Rubiaceæ.

GENERAL GEOGRAPHICAL DISTRIBUTION OF RUBIACEÆ.

On comparing the number of species of Rubiaceæ in Tropical Africa with that in other important or isolated regions, the following interesting summaries and estimates may be given.

We find that in the Cape Flora there are about 106 species; see Harv. & Sond. Fl. Cap. vol. iii. (1864–1865). In the 'Flora Orientalis' there are about 182 species; see Boiss. Fl.Orient.vol. iii. (1875). In Algeria, Mumby gives in his 'Catalogus' (1859) 39 species, which include 21 species of the critical genus *Galium*.

In Spain, Wilkomm and Lange (1870) give 78 species, of which 53 are *Galia*; in Britain there are 14–17 species, of which 10–13 are *Galia*; and in the whole of Europe 171 species (Nyman, 1865), 110 being *Galia* and 43 *Asperulæ*.

In the Deccan peninsula of India, Wight and Arnott (1834) give 155 species, including some obscure or doubtfully native species; in Ceylon, Dr. Thwaites (1864) gives 129 species.

In British India it may be estimated that there are about 550 species.

In Dutch India it appears that there are also about 550 species.

In Australia, Mr. Bentham (1866) gives 110 species.

In New Zealand, Sir J. D. Hooker gives (1864) 31 species, 24 belonging to the genus *Coprosma*.

In the British West Indies, Grisebach (1864) gives 173 species.

In Brazil there may be estimated about 1100–1200 species; for this estimate I am indebted to Dr. Müller, of Geneva, who is at present engaged upon part of the Order for the 'Flora Brasiliensis.'

In Mauritius and the Seychelles, where *Filices* have more than double the number of species as compared with any Natural Order of Flowering Plants, Rubiaceæ occupies the fourth place among the latter, while Compositæ holds the sixth place. In the Seychelles, out of 60 (the total number of endemic genera), 14 belong to Rubiaceæ.

There is, of course, great probability that the standard of specific value varies much in the different books from which, and with the different authors from whom, the above numbers are taken, and therefore any conclusions deduced from their comparison must be held subject to this consideration. In my own work the standard has been intended to be kept high, so that plants have been regarded as conspecific unless some good botanical character or marked difference in general aspect fairly separated them; it is quite possible that some of my species will subsequently require division, and, on the other hand, when fuller material is available, some of my specific distinctions will perhaps be found to be bridged over.

Organic Peculiarities.

In order that it may be easy to form an opinion as to the comparative value of the various characters, I here give a general view of the more conspicuous differences which Tropical African Rubiaceæ, whether in the tribes, genera, or species, present in each of the organs and in some of the morphological or physiological conditions.

1. *As to the Flowers.*

The flowers, at least within our geographical range, with the sole exception of the common Levant weed *Vaillantia hispida*, appear to be uniformly hermaphrodite; even though the genus *Psychotria* has, in the New World, some species with polygamo-diœcious flowers, none of our species possess this peculiarity.

2. *Frequency of Dimorphism.*

Dimorphism occurs commonly or at least in some species in the genera *Pentas*, *Virecta*, *Otomeria*, and *Dirichletia*, all of which belong to the tribe Hedyotideæ, also in *Pentanisia*; perhaps a like condition exists in some species of *Tricalysia* and probably also in other genera.

3. *Differences in the Pistil.*

The ovary is usually 2-celled, but in many genera deviations, either occasional or characteristic, occur; it is only 1-celled in *Gardenia*, but incomplete partitions are found in this genus, due to the production of 2 or more parietal placentas; it is also sometimes 1-celled in *Mitriostigma*, *Amaralia*, *Pouchetia*, *Lamprothamnus*, and *Rubia*.

The ovary is 2–3-celled in *Siphomeris* and in one species of *Rutidea*, and by exception the same increase in the usual number of cells is said to occur in *Pentas*, *Tricalysia*, and *Pentanisia*, and it is 2–4-celled in *Cephaëlis*. It is 3-celled in *Richardia*, 4-celled in *Morelia* and *Morinda*, and very rarely so in one species of *Pavetta*, 3–5-celled in *Stipularia*, *Vangueria*, *Fadogia*, and *Cuviera*, 4–5-celled in *Urophyllum* and *Sabicea*, 5-celled in *Temnopteryx*, *Pentaloncha*, and *Ancylanthos*, 5–7-celled in *Triainolepis*, 10–12-

celled in *Lasianthus*. The number of lobes or teeth of the style or stigma usually agrees with the number of cells, whether complete or incomplete, in the ovary. The style is usually of moderate length, that is, about as along as the corolla or shortly exserted; and the upper or stigmatic portion is usually oblong, fusiform, linear, clavate, or often subcapitate. There, are, however, globose, mitriform, or calyptriform stigmas in *Canthium*, *Vangueria*, *Fadogia*, *Cuviera*, and *Ancylanthos*, and they are much dilated in *Macrosphyra* and in one doubtful species of *Oxyanthus*; and the style is far exserted in *Tarenna*, *Macrosphyra*, and *Pavetta*.

The ovules are numerous or several (2 or more) in each cell of the ovary throughout the first great series of the Order, comprising half the number of our genera, while in the other series, comprising the remaining half of the genera, the ovules are always solitary. Their insertion varies considerably in different genera, and is important for the purposes of classification. They are pendulous in the genera *Adina*, *Zygoon*, *Galiniera*, and *Guettarda*, and in the tribes Alberteæ and Vanguerieæ. They are ascending in the genera *Uncaria*, *Hymenodictyon*, *Corynanthe*, and *Hekistocarpa*, and in the tribe Galieæ, while they are erect in the genera *Morinda*, *Siphomeris*, and *Anthospermum*, as well as in the tribe Psychotrieæ. They are peltately attached in the genera *Crossopteryx*, *Dictyandra*, *Leptactina*, *Tarenna*, and *Mitracarpum*, as well as in nearly the whole of the tribe Ixoreæ. The ovules are anatropous in most of the genera, but are amphitropous in the tribes Ixoreæ (except *Morinda*) and Spermacoceæ and in the genus *Rubia*.

The placentas are fleshy in several genera of the tribes Mussændeæ and Gardenieæ, and the ovules are immersed in or impressed on them in *Randia*, *Amaralia*, &c. The disk at the top of the ovary is not usually important in its characters; it varies from the form of an elevated hemisphere, sometimes lobed, to a mere ring, which is sometimes almost obsolete; in *Virecta multiflora* the disk consists of two narrow cones.

4. *Differences in the Fruit.*

Corresponding with numerous, several, or solitary ovules in the ovary, so the fruit has numerous, several, few, or solitary seeds; the number of seeds, however, is often far fewer than that of the ovules, and occasionally, as, for instance, in *Oxyanthus macrophyllus*, we find solitary seeds to result in the fruit after numerous ovules in the flower. Monospermous fruits are also common in the case of the genera with 2-celled and solitary-ovuled ovaries.

The fruit is a syncarpium in *Sarcocephalus* and *Morinda*, baccate and indehiscent in the tribes Mussændeæ, Hamelieæ, and Gardenieæ. It separates into cocci in *Mitragyne*, *Dirichletia*, *Siphomeris*, and Spermacoceæ. It consists of pyrenes in the tribes Guettardeæ, Vanguerieæ, Ixoreæ, and Psychotrieæ; and it is capsular in the tribes Cinchoneæ and Hedyotideæ and in some genera of Naucleeæ, being septicidal in the genera *Adina*, *Uncaria*, *Otomeria*, and *Hekistocarpa*, and loculicidal in *Hymenodictyon*, *Corynanthe*, *Crossopteryx*, *Pentas*, and *Virecta*; it bursts irregularly at the apex in *Argostemma*, and dehisces variously in *Oldenlandia*. In the genus *Virecta* one valve of the capsule is deciduous, whilst the other valve is persistent.

The fruit splits up from the base in *Siphomeris* and *Hypodematium*; the latter genus differs only by this peculiarity from *Spermacoce*, the fruit of which is dicoccous, splitting down the middle from the apex. In the genus *Siphomeris* the epicarp is membranous and bursts in a valvate manner from the base, and each of the compressed pyrenes hangs from the apex of a filiform exterior column, and the general appearance of the fruit much resembles that of Umbelliferæ.

In *Guettarda* the endocarp is very hard and woody and more or less lobed; in *Triainolepis* the pyrenes are bony.

The form of the fruit is commonly globular; it is pisiform in several genera of Mussændeæ, Gardenieæ, and Ixoreæ; it is large in *Amaralia* and some species of *Randia* and *Gardenia*, fusiform or pyriform in *Macrosphyra* and in some species of *Oxyanthus* and *Mitriostigma*. It is more or less didymous or dimidiate in *Canthium* and *Mitracarpum* and in the tribe Galieæ.

The fruit is more or less ribbed longitudinally in the genera *Pentas*, *Otomeria*, *Dirichletia*, *Mussænda*, *Bertiera*, *Oxyanthus*, many species of *Psychotria*, and *Cephaëlis*.

The seeds usually afford valuable characters for the determination of genera, but not so good for the higher divisions of the Order. In *Oldenlandia Peltospermum*, however, the seeds are orbicular and discoid, whereas in the other species of the genus they are angular. The seeds are furnished at both ends with wings (being extensions of the testa) in the genera *Adina*, *Mitragyne*, and *Uncaria*, and in the tribe Cinchoneæ; in *Uncaria* the wings are produced as capillary appendages, in *Hymenodictyon* and *Corynanthe* the wings are undivided at one end and bipartite at the other, while in *Crossopteryx* the peltate seeds have cut membranous wings. Numerous small angular seeds occur in *Pentas*, *Virecta*, and *Otomeria*, and in the tribe Hameliеæ; they are more usually globose in Mussændeæ and Gardenieæ, but the exceptions are too frequent for this distinction to be taken alone for a diagnostic character.

The seeds are convex on the back and concave with a central depression on the face in the genera *Ixora* and *Pavetta*; they are marked on the face with a longitudinal furrow, which is entered by the placenta, in *Coffea*. In *Psychotria* they are in most cases longitudinally ribbed or furrowed on the back, and they are marked on the ventral face with a diagonally placed depressed cross in the genus *Mitracarpum*.

A small aril occurs only in the genus *Galiniera*.

The testa is more or less fibrous or fibrous-sulcate in the genera *Oxyanthus*, *Mitriostigma*, *Pouchetia*, and *Polysphæria*.

Albumen is always present in the seeds except in the case of the genus *Guettarda*; it is usually uniform, but is distinctly ruminated in the genera *Enterospermum*, *Galiniera*, *Polysphæria*, *Rutidea*, and *Grumilea*.

5. *Differences in the Andrœcium.*

There is very little variation in the structure of the andrœcium in Rubiaceæ; the typical form of the anthers is oblong or linear, and though a few genera, especially in the tribes Naucleeæ and Spermacoceæ, exhibit a more ovate or lanceolate or shortly oblong form, yet as this matter is one that is seen only by degrees, it does not afford good distinguishing characters; in the tribe Galieæ, especially in the genus *Galium*, however, the anthers are short.

In the genus *Argostemma* the anthers are connivent and dehisce by lateral pores at the apex. In *Dictyandra* the cells of the anthers are divided into small compartments by a few longitudinal and by many transverse septa, and are therefore termed locellate.

In several species of *Tricalysia* the connective is produced beyond the anther-cells into apiculate appendages; in our species of the genus *Gaillonia* two of the anthers are subsessile, while the remaining anthers are furnished with short but distinct filaments. In *Spermacoce* the number of stamens is rarely reduced to 3 or even to 2.

6. *Differences in the Corolla.*

The corolla is regular, or very nearly so, in all of our species;

it varies in form from rotate, as in *Argostemma*, to long, slender, and narrowly salver-shaped, as in *Oxyanthus*; it is subrotate in *Rhabdostigma* and *Cuviera*, and rather less so, having a short funnel-shaped tube, in *Lamprothamnus*; it is calyptriform in *Cephaëlis clausa*. The tube is curved in some species of *Psychotria*, especially in the section Chasalia. The lobes are crisped in *Heinsia jasminiflora*, caudate-acuminate in some species of *Canthium*, *Vangueria*, and *Cuviera*, and each lobe is furnished at the apex with a quasi-dorsal horn in some species of *Fadogia* and *Psychotria*, and with an elongated club-shaped appendix at the back near the apex in *Corynanthe*. The lobes are reduced to 3 in number in a few species of *Spermacoce*. The æstivation is valvate in the genera *Adina*, *Mitragyne*, *Uncaria*, *Hymenodictyon*, and *Corynanthe*, and in the tribes Hedyotideæ, Mussændeæ, Vanguerieæ, Morindeæ, Psychotrieæ, Pæderieæ, Anthospermeæ, and Galieæ; it is reduplicative-valvate in *Hekistocarpa*, and induplicate-valvate in *Trichostachys*; it is imbricate in the genera *Sarcocephalus*, *Heinsia*, and doubtfully so in *Lepipogon*; and it is dextrosely contorted, as seen from the axis of the flower, in the genera *Crossopteryx* and *Bertiera*, and in the tribes Gardenieæ, Alberteæ, and Ixoreæ.

7. *Differences in the Calyx.*

There is perhaps greater variation in the calyx than in any other organ; and the calyx furnishes good characters in some cases for the discrimination of genera, but more usually for that of species; it is, however, of but little value for higher groups.

The tubes of the contiguous calyces cohere in the genus *Sarcocephalus*, and become confluent in fruit in *Morinda*. In all the genera the calyx is inferior; but in many the tube is extended above the ovary. The tube is ribbed, at least in fruit, in *Pentas*, *Otomeria*, and some other genera; more or less compressed in *Stipularia*, &c.

The limb is developed into a large, dilated, oblique, reticulated lamina in *Dirichletia*; it is unequally lobed in *Pentas*, *Virecta*, *Otomeria*, *Temnopteryx*, *Stipularia*, *Pentanisia*, *Anthospermum*, *Gaillonia*, and in some species of *Spermacoce*. One lobe is frequently much enlarged as a conspicuous coloured lamina in *Mussænda*; in one species of *Sarcocephalus* there is a filiform clavate appendage between the several calyx-teeth, which is soon torn up from its attachment as the corolla grows to its full length. The limb is furnished inside at the base with some fleshy setæ in the genera *Dictyandra* and *Leptactina*; in some species of *Tricalysia* it is split down two opposite sides; and in a species of each of the genera *Randia* and *Cephaëlis* the limb is spathaceous. The lobes are more or less accrescent or foliaceous in *Temnocalyx*, *Pentaloncha*, *Heinsia*, *Dictyandra*, *Leptactina*, *Amaralia*, *Pentanisia*, *Cuviera*, *Anthospermum*, and *Gaillonia*, and in some species of the genera *Randia*, *Gardenia*, *Fadogia*, and *Psilanthus*. The limb of the calyx is, in some genera, reduced to little more than a slightly lobed ring.

The æstivation of the calyx is various, but most frequently open; the principal exceptions are as follows:—In the genus *Lamprothamnus* and in a species of *Pavetta* the calyx-lobes are imbricated in æstivation; in the latter case, however, they are occasionally contorted. The æstivation is contorted in the same direction as in the corolla (homotropous) in the genera *Dictyandra*, *Leptactina*, and in two species of the genus *Tarenna* (*T. nitidula*, var. *Afzelii*, and *T. congensis*); it is contorted in the reverse direction (heterotropous) in the genus *Amaralia*.

8. *Differences in the Inflorescence and Bracts.*

There is considerable variation in the inflorescence. The primary division of the tribe Gardenieæ depends upon the nature of the inflorescence, that is to say, whether it is terminal or axillary; among the former division of the tribe, however, are some genera with the inflorescence terminating in abbreviated, lateral branches. Again, the genera of the tribe Mussændeæ are classified on the same principle; and one genus of this latter tribe is remarkable for having its inflorescence enclosed in one or two campanulate or connate bracts. The tribe Naucleeæ is characterized by flowers confluent or collected in compact heads; and some of the genera of this tribe are mutually distinguished by the presence or absence of paleaceous bracteoles between the several flowers. The structure of the inflorescence also determines to a great extent the classification of the genera of the tribe Psychotrieæ; and involucrate flowers occur in two of the genera of this tribe.

The inflorescence is corymbose in numerous genera; it is capitate in several, as, for instance, in addition to those already alluded to, *Sabicea*, *Cephaëlis*, *Trichostachys*, *Spermacoce*, *Hypodematium*, *Octodon*, *Richardia*, and *Mitracarpum*, as well as in a section of *Psychotria* and in certain species of other genera; in *Rutidea* the capitula are arranged in brachiate terminal panicles; it is spicate in *Hymenodictyon*, *Otomeria*, *Gaillonia*, and in some species of *Bertiera* (in one species of the last genus the spikes are scorpioid); it is fasciculate or clustered in the axils of the leaves in *Temnopteryx*, *Pentaloncha*, *Morelia*, *Lasianthus*, and other genera; and solitary flowers occur in some species of *Randia*, *Gardenia*, *Psilanthus*, *Anthospermum*, and *Diodia*.

Precocious flowers occur in *Zygoon*, *Feretia*, and occasionally in *Tricalysia*. In many genera the flowers are small and inconspicuous, as in *Oldenlandia*, *Hekistocarpa*, *Pauridiantha*, most species of *Spermacoce*, &c.; but large and handsome flowers occur in *Mussænda*, *Heinsia*, *Dictyandra*, *Leptactina*, *Randia* (§ *Euclinia*), *Gardenia*, *Oxyanthus*, *Amaralia*, *Ixora*, *Pavetta*, and *Coffea*.

Tetramerous and pentamerous flowers are by far the commonest, but hexamerous flowers are by no means uncommon in certain genera, as, for instance, *Tricalysia* and *Coffea*; octomerous flowers occur in one species of *Randia*, and as many as eleven divisions in the corolla occur in one species of *Gardenia*. The flowers are fragrant in many species, as, for example, in *Gardenia*, *Crossopteryx*, &c.; an opposite condition, in which the flowers have a very disagreeable smell, occurs in *Canthium fœtidum*. The colour of the flower is various, and white flowers are not at all rare.

The bracts are involucrate in *Sabicea*, *Stipularia*, and *Cephaëlis*; in *Hymenodictyon* they are foliaceous, reticulated, marcescent, and long-stalked, and form a very conspicuous addition to the flowers. The bracteoles are connate at the base and become calyculate in *Tricalysia*, *Polysphæria*, *Lamprothamnus* and *Coffea*; one lobe of the epicalyx often becoming foliaceous in one species of *Tricalysia*. Numerous filiform bracteoles surround the flowers in *Octodon*; and bracteoles are altogether absent from *Galium*. The position of the bracteoles in *Pavetta* is useful in separating this genus from its near ally *Ixora*.

9. *Differences in the Leaves and Stipules.*

The variation in the foliage is limited by the condition that the leaves are uniformly opposite or verticillate and quite entire; the only exception within the range of our flora that has come under notice is that a barren shoot of *Randia malleifera* (Schweinfurth, no. 1877) had alternate leaves. In the majority of genera the leaves are opposite; in some cases the internode between contiguous pairs of opposite leaves is so abbreviated as to give the appearance of quaternate leaves; examples of this occur in *Argostemma* and in *Vangueria tetraphylla*. Ternate leaves occur rarely in *Sarcocephalus Russeggeri* and *Randia*, more frequently in *Gardenia*, and regularly so in *Pavetta ternifolia*. Quaternate leaves occur in our species of *Adina* and in some species of *Gardenia*; and there are whorls of three to five leaves in the genus *Fadogia*. Leaves, more rounded in figure and smaller in size than the rest of the leaves on the plant, occur at the base of the branches in the genera *Cremaspora* and *Polysphæria*. A few species, especially in the genus *Psychotria*, have punctate leaves.

The stipules are either persistent or deciduous; they are undivided in the majority of genera, and are often connate at the base, so as to be intrapetiolar; they are geminate in some species of *Mussænda* and in two out of the three species of *Heinsia*; they are 2–4-cuspidate in some species of *Oldenlandia, Psychotria*, and *Anthospermum*, and in *Triainolepis*; they are 2–∞-setose in *Virecta setigera*, in *Otomeria, Dirichletia*, in some species of *Oldenlandia* and in *Diodia, Spermacoce, Octodon*, and *Gaillonia*; they are multipartite in *Pentas*, and multifid in *Temnopteryx*. The stipules are glumaceous in *Leptactina senegambica, Randia macrantha*, and *Macrosphyra*; and they sheathe the stem in *Trichostachys vaginalis*. In the tribe Galieæ either the stipules are to be considered foliaceous and like the leaves, or the leaves are to be regarded as verticillate and the stipules as wanting.

10. *Differences in Habit and Stature.*

Except the tribe Galieæ, which is but sparingly represented in Tropical Africa, and except also the tribe Spermacoceæ, the prevailing habit of Rubiaceæ consists of shrubs, often small, sometimes scandent, and occasionally arborescent. The tribe of Hedyotideæ, however, is made up almost wholly of herbs, though some species of *Pentas* and the genus *Dirichletia* are undershrubs or more or less bushy. Moreover the genera *Temnopteryx, Pentaloncha*, and *Geophila* consist of herbs, the last-named genus consisting of small, slender, creeping, rooting plants.

Several genera and species are climbing-shrubs, as *Rutidea, Siphomeris, Sabicea*, &c., and a few are spinous, as *Uncaria, Randia dumetorum*, some species of *Canthium*, and some states of *Gardenia Thunbergia*. *Anthospermum* is heath-like, and *Morelia* sometimes produces aërial roots.

A few species constitute trees, such as the species of *Belonophora, Mitragyne, Corynanthe*, &c. Dr. Schweinfurth remarks that in Niamniam-land the large, slim-stemmed Rubiaceæ, by their regularity of growth and symmetry of leaf, appear to imitate and, in a measure, supply the absence of arborescent ferns.

Clinging prickles occur only in some species of Galieæ.

ECONOMIC AND SUPERSTITIOUS USES.

Edible fruits are supplied by the genus *Sarcocephalus* and by species of *Vangueria* and *Oxyanthus*. *Sarcocephalus Russeggeri* produces a gum; and, according to Dr. Schweinfurth, from the wood of the latter plant, which is called "damma," little four-legged stools are made and employed in Niamniam-land on occasions when the augury is consulted.

According to a note of Afzelius, the bark of *Canthium Afzelianum* is employed at Sierra Leone in the case of swelled legs. The bark of *Crossopteryx* is employed as a febrifuge; for an account of the medicinal virtues of this plant, see Winterbottom, 'Account of Sierra Leone,' vol. ii. pp. 45, 46, 243–253 (1803).

In Niamniam-land and Monbuttu-land, and in other interior parts of Africa explored by Schweinfurth, the sap of *Randia malleifera*, locally called "blippo," is employed to dye the human body with black marks in stripes or elaborate patterns. A red dye is derived from *Urophyllum rubens* by the natives in the island of Fernando Po; and madder, *Rubia tinctorum*, is cultivated in Abyssinia for economic purposes.

A resinous secretion issues from *Gardenia resiniflua*. The wood of *Mitragyne africana* is good for carving, and in the country of the Niger is used for writing-tablets. The timber is good of *Corynanthe* and *Gardenia Jovis-tonantis*. Lances in Bongo-land are made from *Randia dumetorum*, the wood of which is very hard, so much so that it has been designated by the name of ebony: see the figure given in Petherick's 'Travels in Central Africa,' vol. i. p. 164 (1869). The last-named species and *Morelia* are said to be used as fish-poisons. *Gardenia Thunbergia* forms capital fences, which are sufficient to resist the inroads of elephants, according to Colonel Grant; and a decoction of its root, boiled in *Sorghum* flour, is used by the native doctors at Madi to cure hæmaturia.

The following note with regard to *Gardenia Jovis-tonantis* is taken from Welwitsch, 'Apontamentos,' p. 579 (1859). This little tree enjoys a great reputation among the natives of Angola because it is regarded as a preventive against thunderbolts; and they usually, on this account, put branches of it on the top of their dwellings. The name which the natives give to it is "*N-day*" or "*Unday*;" and its wood, which borders a little upon yellow, is of a very fine grain, very compact, heavy, and of extraordinary strength; and it is perhaps on account of the latter quality that the Negroes attribute to it the preventive virtue referred to. It rarely exceeds 7 or, at the most, 9 feet in height; its trunk, however, comes up to 1½–2 feet in circumference, offering thus sufficient diameter to render this precious wood useful for all works of turnery, such as in Europe are usually made with box-wood. Dr. Welwitsch further explains that this plant is remarkable for the large number of lobes into which the various parts of the flower are divided; and on this account he proposed the generic name *Decameria*; the specific name *Jovis-tonantis* he selected in allusion to the supposed influence in time of thunder.

Mungo Park, in his 'Travels in the Interior Districts of Africa,' has the following passage:—"On the first attack of a fever, when the patient complains of a cold, he is frequently placed in a sort of vapour-bath. This is done by spreading branches of the *Nauclea orientalis* upon hot wood embers, and laying the patient upon them wrapped up in a large cotton cloth. Water is then sprinkled upon the branches, which, descending to the hot embers, soon covers the patient with a cloud of vapour, in which he is allowed to remain until the embers are almost extinguished. This practice commonly produces a profuse perspiration, and wonderfully relieves the sufferer."

Nauclea orientalis is a name which has been long known to science as an East-Indian plant, but which unfortunately had, even by Mungo Park's time, been employed to designate two different species which now are placed in two different genera, neither of which is *Nauclea*, though both belong to the tribe Naucleeæ. It is therefore uncertain what species or genus Mungo Park took his plant to be; but it is nearly certain that he was treating of either *Sarcocephalus esculentus* or *Mitragyne africana*: and inasmuch as I have seen a specimen of the former species collected by Mungo Park and now in the department of botany at the British Museum, and as I have seen no such specimen of the latter species, I conclude that it is most likely that *Sarcocephalus esculentus* afforded the febrifuge spoken of by Mungo Park. The medicinal qualities of this same species are alluded to by T. Winterbottom in his 'Account of the Native Africans in the Neighbourhood of Sierra Leone,' vol. ii. p. 45, under the name of *Nauclea sambucina*.

Coffee[*] is indigenous, as well as cultivated, in Tropical Africa; *Coffea arabica* is native in Abyssinia, and, according to Welwitsch, in Angola. Colonel Grant (Trans. Linn. Soc. Lond. xxix. p. 87) states that near the Victoria Nyanza lake at Witchroo it grows wild and certainly never introduced; he adds that the inhabitants do not use the berry in decoction, but chew the undeveloped beans to soothe and allay hunger and thirst: he saw it in flower and fruit; but as specimens do not exist in his collection, I think that some little doubt must remain as to the scientific determination of the plant. Other species produce coffee, as *C. liberica* (Liberian coffee), *C. stenophylla* (the highland coffee of Sierra Leone), *C. racemosa*, and others; also *Feretia apodanthera* in Abyssinia, a species of *Tricalysia* in Angola, and *Randia genipæflora* (the wild coffee of Fernando Po) produce fruits which can be used as substitutes for coffee.

NEW SPECIES OF AFRICAN RUBIACEÆ.

The two following species, of which I now add technical characters, are recent additions of material to the Rubiaceæ of Tropical Africa.

PENTAS PARVIFOLIA, *Hiern*, sp. n. Herba suffruticosa puberula ramis sulcato-striatis, foliis lineari-ovalibus vel lanceolatis oppositis vel (ramulis abbreviatis lateralibus efformatis) fasciculato-approximatis,apice vel obtusis vel subacutis vel mucronulatis, basi in petiolum brevem attenuatis, ½–¾-pollicaribus, subtus subpallidioribus, margine anguste revolutis, venis lateralibus utrinsecus 3-4 inconspicuis, stipulis e basi brevi truncata 3 2-setoso-cuspidatis, floribus pentameris ⅔-pollicaribus subsessilibus in densas pedunculatas vel subsessiles terminales cymas aggregatis, calycis longo lobo ovali-oblongo foliaceo ⅙–⅕-pollicari, parvis lobis subulatis, corollæ tubo apice subinfundibulari gracili faucibus barbatis, antheris inclusis, stylo exserto gracili apice bilobo, fructibus ⅙-pollicaribus.

Habitat in insula "Mombassa" dicta ad Africæ oram Zanguebaricam; specimina a cl. J. M. Hildebrandt, no. 1994, mense Martio, anni 1876, lecta et in herbario Musei Britannici a me visa. (*Vide* Tab. VII.)

This differs from all previously known species of *Pentas* by the narrow shape and small size of the leaves.

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[*] For further remarks on this subject, see my paper "On the African Species of the Genus *Coffea*, Linn.," Trans. Linn. Soc. Bot. (ser. 2), vol. i. pp. 169–176.

TRICHOSTACHYS VAGINALIS, *Hiern*, sp. n. *T.* reptans, caulis apice vel ramulis pubentibus, foliis ovalibus apice cuspidato-acuminatis basi obtuse angustatis petiolatis utrinque pilis crispis sparsis subtus subpallidioribus $3\frac{1}{2}$–4 pollices longis 2–$2\frac{1}{4}$ pollices latis, venis lateralibus utrinsecus 7–8 gracilibus, petiolo pubente $\frac{2}{3}$–$\frac{3}{4}$ poll., stipulis $\frac{1}{2}$–$\frac{3}{5}$ poll. bifidis, inferne connato-vaginantibus apice caudato-acuminatis extus pubentibus, floribus albidis pentameris $\frac{3}{8}$ poll. subsessilibus in capitula hemisphærica pollicaria dense aggregatis, pedunculo communi pollicari stipulaceo-bracteatis, bracteolis inter flores linearibus ciliatis calyces subæquantibus, calyce $\frac{1}{4}$ poll. limbo profunde lobato pubente lobis lineari-lanceolatis $\frac{1}{8}$–$\frac{1}{6}$ poll., corollæ tubo cylindrico faucibus dense barbatis lobis patentibus $\frac{1}{8}$ poll. apice mucronato-cornutis, antheris exsertis glabris lineari-oblongis filamenta subæquantibus, disco globoso elevato.

Habitat in Guinea ad Mopanga (Cameroons): legit Kalbreyer, n. 153, alt. 2600 ped., die 30 mensis Martii anni 1877.

Herba 8–12-pollicaris in fruticum umbra crescens. (*Vide* Tab. VIII.)

TABULAR VIEW OF TROPICAL AFRICAN RUBIACEÆ.

The subjoined is a systematic list of the tribes, genera, and species of Rubiaceæ in Tropical Africa, with the distribution of the species in the six districts into which the geographical region is divided, and with the geographical range of the species which extend beyond.

Botanical Name.	Upper Guinea.	North Central.	Nile-land.	Lower Guinea.	South Central.	Mozambique district.	External Range.
Tribe I. **Naucleeæ.**							
1. SARCOCEPHALUS, *Afz.*							
1. S. esculentus, *Afz.*	*						
2. S. Russeggeri, *Ky.*		*	*				
2. ADINA, *Salisb.*							
1. A. microcephala, *Hn.*			*				
3. MITRAGYNE, *Korth.*							
1. M. africana, *Korth.*	*		*				
2. M. macrophylla, *Hn.*	*		*	*			
4. UNCARIA, *Schreb.*							
1. U. africana, *G. Don*	*	*					? Comoro Islands.
Tribe II. **Cinchoneæ.**							
5. HYMENODICTYON, *Wall.*							
1. H. Kurria, *Hochst.*			*	*			
2. H. biafranum, *Hn.*	*						

Botanical Name.	Upper Guinea.	North Central.	Nile-land.	Lower Guinea.	South Central.	Mozambique district.	External Range.
6. Corynanthe, *Welw.*							
1. C. paniculata, *Welw.*				*			
7. Crossopteryx, *Fenzl.*							
1. C. Kotschyana, *Fenzl.*	*		*	*		*	
Tribe III. **Hedyotideæ.**							
8. Argostemma, *Wall.*							
1. A. pumilum, *Benn.*	*						? Nipal, North-west Himalayas, to Burmah, and mountains of the Deccan peninsula of India.
9. Pentas, *Bth.*							
1. P. Schimperiana, *Vatke.*			*				
2. P. occidentalis, *B. et H.f.*	*						
3. P. carnea, *Bth.*			*	*		*	Tropical Arabia and Comoro Islands.
4. P. purpurea, *Oliv.*			*			*	
5. P. arvensis, *Hn.*			*				
6. P. parviflora, *Bth.*	*						
10. Virecta, *Afz.*							
1. V. multiflora, *Sm.*	*			??			
2. V. procumbens, *Sm.*	*			*			
3. V. angustifolia, *Hn.*	*						
4. V. setigera, *Hn.*	*						
11. Otomeria, *Bth.*							
1. O. guineensis, *Bth.*	*						
2. O. madiensis, *Oliv.*		*	*				
3. O. dilatata, *Hn.*	*						
4. O. lanceolata, *Hn.*				*			
12. Dirichletia, *Kl.*							
1. D. pubescens, *Kl.*						*	
2. D. glabra, *Kl.*						*	
3. D. glaucescens, *Hn.*			*				
13. Oldenlandia, *Plum.*							
1. O. peltospermum, *Hn.*	*						
2. O. Bojeri, *Hn.*					*	*	Madagascar and Comoro Islands.
3. O. globosa, *Hn.*			*				
4. O. decumbens, *Hn.*	*			*		*	Natal and Madagascar.
5. O. lasiocarpa, *Hn.*						*	
6. O. rigida, *Hn.*				*			
7. O. Schimperi, *T. And.*			*				Upper Egypt, Arabia, Sinai, Beloochistan, and Scinde.
8. O. obtusiloba, *Hn.*						*	
9. O. senegalensis, *Hn.*	*		*				
10. O. noctiflora, *Hn.*			*				
11. O. grandiflora, *Hn.*	*		*				
12. O. abyssinica, *Hn.*	*		*				
13. O. strumosa, *Hn.*			*				Cape de Verde, India and ? East India.
14. O. caffra, *E. et Z.*				*		*	Cape districts and Natal, also ? Madagascar.
15. O. virgata, *DC.?*	*					*	
16. O. effusa, *Oliv.*	*				*	*	
17. O. Heynei, *Miq.*	*		*				India, Natal, and ? Madagascar.
18. O. parviflora, *Oliv.*	*		*				
19. O. flosculosa, *Hn.*						*	
20. O. monanthos, *Hn.*			*				
21. O. cæspitosa, *Hn.*	*						

Botanical Name.	Upper Guinea.	North Central.	Nile-land.	Lower Guinea.	South Central.	Mozambique district.	External Range.
13. Oldenlandia (*continued*).							
22. O. tenuissima, *Hn.*	......	......	......	......	*		
23. O. lancifolia, *Schwf.*	*	*	*				
24. O. corymbosa, *L.*	*	......	*	*	......	*	A common Tropical weed.
25. O. capensis, *L. f.*	*	......	*	......	......	*	Cape flora and Madagascar, Syria.
26. O. trinervia, *Retz.*	*	......	*	......	......	*	India, Madagascar, Mauritius, &c.
27. O. macrophylla, *DC.*	*	......	*	*	......	*	Natal, Seychelles, and Comoro Islands.
28. O. wauensis, *Hn.*	......	......	*				
29. O. hedyotoides, *Boiss.*	......	......	*	......	......	......	Upper Egypt and Armenia.
14. Hekistocarpa, *Hk. f.*							
1. H. minutiflora, *Hk. f.*	*						
Tribe IV. **Mussændeæ.**							
15. Mussænda, *Ray.*							
1. M. Afzelii, *G. Don*	*	......	......	*			
2. M. Isertiana, *DC.*	*						
3. M. polita, *Hn.*	*						
4. M. stenocarpa, *Hn.*	......	*					
5. M. arcuata, *Poir.*	*	......	*	*	......	*	Mauritius and Madagascar.
6. M. tenuiflora, *Bth.*	*						
7. M. erythrophylla, *S. et T.*	*	*	*	*			
8. M. elegans, *S. et T.*	*	*	......	*			
9. M.? heinsioides, *Hn.*	......	......	......	*			
10. M.? platyphylla, *Hn.*	......	*					
11. M. grandiflora, *Bth.*	*						
12. M. luteola, *Del.*	......	......	*				
16. Pauridiantha, *Hk. f.*							
1. P. canthiifolia, *Hk. f.*	*						
17. Urophyllum, *Wall.*							
1. U. hirtellum, *Bth.*	*						
2. U. callicarpoides, *Hn.*	*						
3. U. insulare, *Hn.*	*						
4. U. rubens, *Bth.*	*						
5. U. Afzelii, *Hn.*	*						
6. U. paucinerve, *Hn.*	*						
7. U. micranthum, *Hn.*	*						
8. U. viridiflorum, *Schwf.*	......	*					
18. Sabicea, *Aubl.*							
1. S. ferruginea, *Bth.*	*						
2. S. calycina, *Bth.*	*						
3. S. pilosa, *Hn.*	*						
4. S. Vogelii, *Bth.*	*						
5. S. capitellata, *Bth.*	*	......	......	*			
6. S. venosa, *Bth.*	*						
7. S.? segregata, *Hn.*	*						
8. S.? cauliflora, *Hn.*	*						
9. S.? geantha, *Hn.*	*						
19. Temnopteryx, *Hk. f.*							
1. T. sericea, *Hk. f.*	*						

Botanical Name.	Upper Guinea.	North Central.	Nile-land.	Lower Guinea.	South Central.	Mozambique district.	External Range.
20. Pentaloncha, *Hk. f.*							
1. P. humilis, *Hk. f.*	*						
21. Stipularia, *Beauv.*							
1. S. africana, *Beauv.*	*						
2. S. elliptica, *Schwf.*	*		*				
3. S. gabonica, *Hn.*	*						
Tribe V. **Hamelieæ.**							
22. Heinsia, *DC.*							
1. H. jasminiflora, *DC.*	*			*		*	
2. H. densiflora, *Hn.*						*	
3. H. benguelensis, *Welw.*				*			
23. Bertiera, *Aubl.*							
1. B. æthiopica, *Hn.*			*				
2. B. subsessilis, *Hn.*	*						
3. B. montana, *Hn.*	*						
4. B. africana, *A. Rich.*	*						
5. B. macrocarpa, *Bth.*	*						
6. B. bracteolata, *Hn.*	*						
7. B. laxa, *Bth.*	*			* ?			
8. B. breviflora, *Hn.*	*						
Tribe VI. **Gardenieæ.**							
24. Dictyandra, *Welw.*							
1. D. arborescens, *Welw.*	*			*			
2. D. involucrata, *Hn.*	*						
25. Leptactina, *Hk. f.*							
1. L. Mannii, *Hk. f.*	*						
2. L. densiflora, *Hk. f.*	*						
3. L. senegambica, *Hk. f.*	*						
4. L. heinsioides, *Hn.*					*		
26. Tarenna, *Gærtn.*							
1. T. angolensis, *Hn.*				*			
2. T. mossambicensis, *Hn.*						*	
3. T. nilotica, *Hn.*			*				
4. T. conferta, *Hn.*	*						
5. T. nitidula, *Hn.*	*						
6. T. congensis, *Hn.*				*			
7. T. pallidula, *Hn.*	*						
8. T. tetramera, *Hn.*	*						
9. T. grandiflora, *Hn.*	*						
10. T. nigrescens, *Hn.*						*	
27. Enterospermum, *Hn.*							
1. E. littorale, *Hn.*						*	? Inhambane.
28. Randia, *Houst.*							
1. R. dumetorum, *Lam.*			*			*	East Indies and Hongkong.
2. R. acuminata, *Bth.*	*	*					
3. R. genipæflora, *DC.*	*						
4. R. rubens, *Hn.*	*						
5 R. pallens, *Hn.*	*						
6. R. gambica, *Hn.*	*						
7. R. ? caudata, *Hn.*	*						

Botanical Name.	Upper Guinea.	North Central.	Nile-land.	Lower Guinea.	South Central.	Mozambique district.	External Range.
28. Randia (*continued.*)							
8. R. maculata, *DC.*	*	*					
9. R. macrantha, *DC.*	*						
10. R. macrocarpa, *Hn.*	*						
11. R. malleifera, *B. et H. f.*	*	*	*	*			
12. R. octomera, *B. et H. f.*	*						
13. R. Munsæ, *Schwf.*	......	*					
29. Gardenia, *Ellis.*							
1. G. Thunbergia, *L. f.*	*	*	*	*	*	*	South of the tropic.
2. G. Jovis-tonantis, *Hn.*	......	......	......	*			
3. G. resiniflua, *Hn.*	......	......	......	......	......	*	
4. G. assimilis, *Afz.*	*						
5. G. nitida, *Hk.*	*						
6. G. Vogelii, *Hk. f.*	*	......	*	*			
7. G. Manganjæ, *Hn.*	......	......	......	......	......	*	
8. G. Annæ, *P. Wr.*	......	......	......	......	......	*	Seychelles Islands.
9. G. Abbeokutæ, *Hn.*	*						
10. G. konguensis, *Hn.*	*						
11. G. urcelliformis, *Hn.*	......	......	*				
12. G. fernandensis, *Hn.*	*						
13. G. ? zanguebarica, *Hn.*	......	......	......	......	......	*	
30. Macrosphyra, *Hk. f.*							
1. M. longistyla, *Hk. f.*	*	......	*				
31. Oxyanthus, *DC.*							
1. O. ? Smithii, *Hn.*	......	......	......	*			
2. O. tubiflorus, *DC.*	*						
3. O. ? sulcatus, *Hn.*	*						
4. O. rubriflorus, *Hn.*	*						
5. O. speciosus, *DC.*	*						
6. O. querimbensis, *Kl.*	......	......	......	......	......	*	
7. O. formosus, *Hk. f.*	*						
8. O. breviflorus, *Bth.*	*						
9. O. gracilis, *Hn.*	*						
10. O. ? platystylis, *Hn.*	*						
11. O. unilocularis, *Hn.*	*						
12. O. macrophyllus, *Schwf.*	......	......	*				
32. Mitriostigma, *Hochst.*							
1. M. ? subpunctatum, *Hn.*	*						
2. M. Barteri, *Hk. f.*	*						
33. Amaralia, *Welw.*							
1. A. bigoniæflora, *Welw.*	*	*	*	*			
34. Morelia, *A. Rich.*							
1. M. senegalensis, *A. Rich.*	*	......	*				
35. Zygoon, *Hn.*							
1. Z. graveolens, *Hn.*	......	......	......	......	......	*	
36. Galiniera, *Del.*							
1. G. coffeoides, *Del.*	......	......	*				
37. Empogona, *Hk. f.*							
1. E. Kirkii, *Hk. f.*	......	......	......	......	......	*	
38. Feretia, *Del.*							
1. F. apodanthera, *Del.*	......	......	*				
2. F. ? canthioides, *Hn.*	*						

Botanical Name.	Upper Guinea.	North Central.	Nile-land.	Lower Guinea.	South Central.	Mozambique district.	External Range.
39. Pouchetia, *A. Rich.*							
1. P. africana, *DC.*	*			*			
2. P. parviflora, *Bth.*	*						
40. Tricalysia, *A. Rich.*							
1. T. Sonderiana, *Hn.*						*	Natal.
2. T. ovalifolia, *Hn.*						*	
3. T. buxifolia, *Hn.*				*			
4. T. syrmanthera, *Hn.*	*						
5. T. bracteata, *Hn.*	*						
6. T. congesta, *Hn.*					*		
7. T. coriacea, *Hn.*	*			*			
8. T. Nyassæ, *Hn.*						*	
9. T. reticulata, *Hn.*	*			*			
10. T. pallens, *Hn.*	*						
11. T. gabonica, *Hn.*	*						
12. T. okelensis, *Hn.*			*				
13. T. biafrana, *Hn.*	*						
14. T. micrantha, *Hn.*	*						
15. T. microphylla, *Hn*						*	
16. T. niamniamensis, *Schf.*			*	* ?			
17. T. djurensis, *Schwf.*			*				
18. T. jasminiflora, *B. et H. f.*						*	
19. T. crassifolia, *B. et H. f.*						*	
20. T. Kirkii, *Hn.*						*	
21. T. angolensis, *A. Rich.*				*			
Tribe VII. **Guettardeæ.**							
41. Guettarda, *Osb.*							
1. G. speciosa, *L.*						*	Madagascar, Seychelles, and Comoro Islands; also East Indies to the Pacific Islands and Australia.
Tribe VIII. **Alberteæ.**							
42. Cremaspora, *Bth.*							
1. C. africana, *Bth.*	*	*	*			*	
2. C. ? Thomsoni, *Hn.*	*						
43. Polysphæria, *Hk. f.*							
1. P. multiflora, *Hn.*						*	
2. P. lanceolata, *Hn.*						*	
3. P. parvifolia, *Hn.*						*	
4. P. Schweinfurthii, *Hn.*			*			??	
44. Belonophora, *Hk. f.*							
1. B. coffeoides, *Hk. f.*	*						
45. Aulacocalyx, *Hk. f.*							
1. A. jasminiflora, *Hk. f.*	*						
46. Lamprothamnus, *Hn.*							
1. L. zanguebaricus, *Hn.*						*	
47. Rhabdostigma, *Hk. f.*							
1. R. Kirkii, *Hk. f.*						*	
Tribe IX. **Vanguerieæ.**							
48. Pentanisia, *Harv.*							
1. P. Schweinfurthii, *Hn.*			*				

Botanical Name.	Upper Guinea.	North Central.	Nile-land.	Lower Guinea.	South Central.	Mozambique district.	External Range.
49. CANTHIUM, *Lam.*							
1. C. glaucum, *Hn.*			*			*	
2. C. Thonningii, *Bth.*	*						
3. C. setiflorum, *Hn.*						*	
4. C. nitens, *Hn.*	*						
5. C. neglectum, *Hn.*			*				
6. C. Schimperianum, *A. Rh*			*				
7. C. Vatkeanum, *Hn.*			*				
8. C. anomocarpum, *DC.*	*						
9. C. acutiflorum, *Hn.*	*						
10. C. caudatiflorum, *Hn.*	*						
11. C. horizontale, *Hn.*	*						
12. C. discolor, *Bth.*	*						
13. C. oligocarpum, *Hn.*			*				
14. C. zanzibaricum, *Kl.*			*			*	
15. C. gracile, *Hn.*				*			
16. C. Heudelotii, *Hn.*	*						
17. C. polycarpum, *Schwf.*			*				
18. C. glabriflorum, *Hn.*	*						
19. C. Cornelia, *Ch. et Schl.*	*						
20. C. hispidum, *Bth.*	*			*			
21. C. setosum, *Hn.*	*						
22. C. subcordatum, *DC.*	*						
23. C. congense, *Hn.*				*			
24. C. rubens, *Hn.*	*						
25. C. fœtidum, *Hn.*					* ?		
26. C. Afzelianum, *Hn.*	*						
27. C. Barteri, *Hn.*	*						
28. C. nervosum, *Hn.*	*						
29. C. Mannii, *Hn.*	*						
30. C. lividum, *Hn.*						*	
31. C. venosum, *Hn.*	*		*				
32. C. ? multiflorum, *Hn.*	*						
33. C. bibracteatum, *Hn.*						*	Madagascar, Seychelles, and Comoro Islands.
34. C. crassum, *Hn.*			*				
35. C. vangueroides, *Hn.*	*						
36. C. lanciflorum, *Hn.*					*		
50. VANGUERIA, *Comm.*							
1. V. infausta, *Burch.*						*	South of the tropic, Madagascar.
2. V. edulis, *Vahl*	*		*		* ?		
3. V. abyssinica, *A. Rich.*			*				
4. V. senegalensis, *B. et H. f.*	*						
5. V. canthioides, *Bth.*	*						
6. V. euonymoides, *Schwf.*	*		*	*			
7. V. umbellulata, *Hn.*	*						
8. V. concolor, *Hn.*	*			* ?			
9. V. membranacea, *Hn.*	*						
10. V. velutina, *Hn.*					*	*	
11. V. pauciflora, *Schwf.*			*				
12. V. tetraphylla, *Schwf.*			*				
51. FADOGIA, *Schwf.*							
1. F. leucophlœa, *Hn.*			*				
2. F. Zeyheri, *Sond.*					*?		Transvaal.

Botanical Name.	Upper Guinea.	North Central.	Nile-land.	Lower Guinea.	South Central.	Mozambique district.	External Range.
51. Fadogia (*continued*).							
3. F. agrestis, *Schwf.*	*		*				
4. F. Cienkowskii, *Schwf.*	*	*	*	*			
5. F. glaberrima, *Schwf.*			*				
6. F. stenophylla, *Welw.*				*			
7. F. fuchsioides, *Welw.*			*	*			
8. F. ancylantha, *Schwf.*			*				
9. F. lactiflora, *Welw.*				*			
52. Cuviera, *DC.*							
1. C. acutiflora, *DC.*	*						
2. C. subuliflora, *Bth.*	*						
3. C. longiflora, *Hn.*	*						
4. C. trilocularis, *Hn.*	*						
53. Ancylanthos, *Desf.*							
1. A. rubiginosa, *Desf.*				*			
2. A. fulgidus, *Welw.*				*			
3. A. cinerascens, *Welw.*				*			
4. A. cistifolius, *Welw.*				*			
5. A. Bainesii, *Hn.*					* ?		
54. Craterispermum, *Bth.*							
1. C. laurinum, *Bth.*	*						
2. C. cerinanthum, *Hn.*	*						
3. C. brachynematum, *Hn.*	*						
4. C. Schweinfurthii, *Hn.*			*				
5. C. montanum, *Hn.*	*						
Tribe X. **Ixoreæ.**							
55. Ixora, *L.*							
1. I. radiata, *Hn.*	*		*				
2. I. odorata, *Hk.*						*	Madagascar.
3. I. laxiflora, *Sm.*	*						
4. I. Thomsoni, *Hn.*	*						
5. I. riparia, *Hn.*	*						
6. I. breviflora, *Hn.*	*						
7. I. brachysiphon, *Hn.*	*						
8. I. guineensis, *Bth.*	*						
9. I. foliosa, *Hn.*	*						
10. I. Soyauxii, *Hn.*				*			
11. I. inundata, *Hn.*	*						
12. I. minutiflora, *Hn.*	*						
13. I. modesta, *Hn.*	*						
56. Pavetta, *L.*							
1. P. brachycalyx, *Hn.*	*						
2. P. Mannii, *Hn.*	*						
3. P. monticola, *Hn.*	*						
4. P. bidentata, *Hn.*	*						
5. P. owariensis, *Beauv.*	*						
6. P. glaucescens, *Hn.*	*						
7. P. puberula, *Hn.*	*						
8. P. crebrifolia, *Hn.*						*	
9. P. macrosepala, *Hn.*						*	

Botanical Name.	Upper Guinea.	North Central.	Nile-land.	Lower Guinea.	South Central.	Mozambique district.	External Range.
56. Pavetta (*continued*).							
10. P. neurocarpa, *Bth.*	*						
11. P. subcana, *Hn.*			*				
12. P. gracilis, *Kl.*						*	
13. P. abyssinica, *Fres.*			*				
14. P. Oliveriana, *Hn.*			*				
15. P. mollis, *Afz.*	*						
16. P. dolichosepala, *Hn.*				*			
17. P. hispida, *Hn.*	*						
18. P. genipæfolia, *Schum.*	*						
19. P. Baconia, *Hn.*	*		*	*			
20. P. Hookeriana, *Hn.*	*						
21. P. ternifolia, *Hn.*			*				
22. P. gardiniæfolia, *Hochst.*			*				
23. P. canescens, *DC.*				*			
24. P. rigida, *Hn.*	*						
25. P. gracilipes, *Hn.*	*						
57. Coffea.							
1. C. arabica, *L.*	*		*	*		*	? Arabia.
2. C. liberica, *Bull*	*			*			
3. C. stenophylla, *G. Don*	*						
4. C. Zanguebariæ, *Lour.*						*	
5. C. brevipes, *Hn.*	*						
6. C. melanocarpa, *Welw.*				*			
7. C. hypoglauca, *Welw.*				*			
8. C. ? microcarpa, *DC.*	*						
9. C. Afzelii, *Hn.*	*						
10. C. subcordata, *Hn.*	*						
11. C. rupestris, *Hn.*	*						
12. C. jasminioides, *Welw.*	*			*			
13. C. racemosa, *Lour.*						*	
58. Psilanthus, *Hk. f.*							
1. P. Mannii, *Hk. f.*	*						
2. P. ? ebracteolatus, *Hn.*	*						
3. P. ? tetramerus, *Hn.*	*						
59. Rutidea, *DC.*							
1. R. rufipilis, *Hn.*	*						
2. R. parviflora, *DC.*	*						
3. R. olenotricha, *Hn.*	*	*					
4. R. ferruginea, *Hn.*	*						
5. R. hispida, *Hn.*	*						
6. R. Smithii, *Hn.*				*			
7. R. decorticata, *Hn.*	*						
8. R. membranacea, *Hn.*	*						
9. R. glabra, *Hn.*	*						
10. R. fuscescens, *Hn.*						*	
Tribe XI. **Morindeæ.**							
60. Morinda, *Vaill.*							
1. M. citrifolia, *L.*	*	*		*			Old-World Tropics.
2. M. longiflora, *G. Don*	*	*	*	*			

Botanical Name.	Upper Guinea.	North Central.	Nile-land.	Lower Guinea.	South Central.	Mozambique district.	External Range.
Tribe XII. **Psychotrieæ.**							
61. Psychotria, *L.*							
1. P. pauridiantha, *Hn.*	*						
2. P. brachyantha, *Hn.*	*						
3. P. setacea, *Hn.*	*						
4. P. Mannii, *Hn.*	*						
5. P. foliosa, *Hn.*	*						
6. P. lophoclada, *Hn.*	*						
7. P. cornuta, *Hn.*	*						
8. P. humilis, *Hn.*	*						
9. P. bifaria, *Hn.*	*						
10. P. umbellata, *Thonn.*	*						
11. P. monticola, *Hn.*	*						
12. P. calva, *Hn.*	*						
13. P. leptophylla, *Hn.*	*						
14. P. Doniana, *Bth.*	*						
15. P. konguensis, *Hn.*	*						
16. P. subpunctata, *Hn.*	*						
17. P. brunnea, *Schwf.*		*					
18. P. longevaginalis, *Schwf.*		*					
19. P. gabonica, *Hn.*	*						
20. P. arborea, *Hn.*	*						
21. P. sciadephora, *Hn.*	*						
22. P. punctata, *Vatke*						*	
23. P. obtusifolia, *Poir.*						*	Madagascar.
24. P. zambesiana, *Hn.*						*	
25. P. Kolly, *Schum.*	*						
26. P. Benthamiana, *Hn.*	*						
27. P. owariensis, *Juss.*	*						
28. P. Brassii, *Hn.*	*						
29. P. Afzelii, *Hn.*	*						
30. P. cristata, *Hn.*		*	*				
31. P. abrupta, *Hn.*						*	
32. P. anetoclada, *Hn.*	*						
33. P. Kirkii, *Hn.*						*	
34. P. recurva, *Hn.*	*						
35. P. subobliqua, *Hn.*	*						
36. P. pumila, *Hn.*						*	
37. P. nigropunctata, *Hn.*				*			
38. P. bracteosa, *Hn.*	*						
39. P. globosa, *Hn.*	*						
40. P. insidens, *Hn.*	*						
41. P. subherbacea, *Hn.*	*						
42. P. infundibularis, *Hn.*	*						
43. P. subnuda, *Hn.*	*						
44. P. longistylis, *Hn.*	*						
45. P. bidentata, *Hn.*	*						
46. P. Vogeliana, *Bth.*	*						
47. P. latistipula, *Bth.*	*						
48. P. Schweinfurthii, *Hn.*			*				
49. P. lucens, *Hn.*	*						

Botanical Name.	Upper Guinea.	North Central.	Nile-land.	Lower Guinea.	South Central.	Mozambique district.	External Range.
61. PSYCHOTRIA (*continued*).							
50. P. reptans, *Bth.*	*						
51. P. mucronata, *Hn.*			*				
52. P. stictophylla, *Hn.*	*						
53. P. obscura, *Bth.*	*						
54. P. crispa, *Hn.*	*						
55. P. trachystyla, *Hn.*	*						
56. P. Soyauxii, *Hn.*				*			
57. P. virens, *Hn.*	*						
58. P. Ansellii, *Hn.*	*						
59. P. zanguebarica, *Hn.*						*	
60. P. umbraticola, *Hn.*						*	
61. P. nubica, *Del.*			*				
62. GRUMILEA, *Gærtn.*							
1. G. psychotrioides, *DC.*	*						
2. G. succulenta, *Hn.*			*				
3. G. Kirkii, *Hn.*						*	
4. G. macrocarpa, *Hn.*	*						
5. G. venosa, *Hn.*	*						
6. G. micrantha, *Hn.*	*						
7. G. sphærocarpa, *Hn.*	*						
8. G. articulata, *Hn.*	*						
9. G. sulphurea, *Hn.*			*				
63. TRIAINOLEPIS, *Hk. f.*							
1. T. africana, *Hk. f.*						*	
2. T. Hildebrandtii, *Vatke*						*	Madagascar.
64. GEOPHILA, *D. Don.*							
1. G. reniformis, (?) *D. Don*	*						? America and India.
2. G. hirsuta, *Bth.*	*						
3. G. lancistipula, *Hn.*	*						
4. G. uniflora, *Hn.*	*		*				
5. G. Afzelii, *Hn.*	*						
6. G. obvallata, *F. Didr.*	*						
7. G. involucrata, *Schwf.*		*	*				
65. CEPHAËLIS, *Sw.*							
1. C. peduncularis, *Salisb.*	*			*			
2. C. suaveolens, *Schwf.*			*				
3. C. cornuta, *Hn.*	*						
4. C. fuscescens, *Hn.*	*						
5. C. rubescens, *Hn.*	*						
6. C. clausa, *Hn.*	*						
7. C. spathacea, *Hn.*	*						
8. C. Mannii, *B. et H. f.*	*						
9. C. latifolia, *Hn.*	*						
10. C. congensis, *Hn.*				*			
66. TRICHOSTACHYS, *Hk. f.*							
1. T. longifolia, *Hn.*	*						
2. T. petiolata, *Hn.*	*						
3. T. aurea, *Hn.*	*						
4. T. ciliata, *Hn.*	*						
67. LASIANTHUS, *Jack.*							
1. L. africanus, *Hn.*	*						

Botanical Name.	Upper Guinea.	North Central.	Nile-land.	Lower Guinea.	South Central.	Mozambique district.	External Range.
Tribe XIII. **Pæderieæ.**							
68. Siphomeris, *Boj.*							
1. S. fœtens, *Hn.*						*	
Tribe XIV. **Anthospermeæ.**							
69. Anthospermum, *L.*							
1. A. pachyrrhizum, *Hn.*			*				
2. A. muricatum, *Hochst*			*				
3. A. asperuloides, *Hk. f.*	*						
Tribe XV. **Spermacoceæ.**							
70. Diodia, *Gron.*							
1. D. Kirkii, *Hn.*						*	
2. D. rubricosa, *Hn.*	*						
3. D. arenosa ?, *DC.*	*						? Brazil.
4. D. maritima, *Thonn.*	*			*			Tropical America.
5. D. breviseta, *Bth.*	*		*	*		*	Madagascar and Tropical America.
6. D. vaginalis, *Bth.*	*						
71. Gaillonia, *A. Rich.*							
1. G. calycoptera, *Jaub. et Sp.*			*				Arabia Petræa.
72. Spermacoce, *Dill.*							
1. S. tenuissima, *Hn.*			*				
2. S. filiformis, *Hn.*	*						
3. S. phyteuma, *Schwf.*			*				
4. S. compressa, *Afz.*	*						
5. S. ? pilosa, *DC.*	*						
6. S. senensis, *Hn.*			* ?			*	
7. S. stricta, *L. f.* ?	*		*			*	Old-World tropics.
8. S. hebecarpa, *Oliv.*	*		*				
9. S. leucadea, *Hochst.*			*				
10. S. stachydea ?, *DC.*	*	* ?					
11. S. radiata, *Sieb.*	*		*				
12. S. ramisparsa, *Pohl*	*						A common tropical weed.
13. S. Ruelliæ, *DC.*	*	*	*	*			Madagascar and Delagoa Bay.
14. S. dibrachiata, *Oliv.*			*			*	
15. S. Kotschyana, *Oliv*			*				
16. S. compacta, *Hochst.*			*				
17. S. globosa, *S. et T.*	*					*	Cape de Verde Islands.
73. Hypodematium, *A. Rich.*							
1. H. sphærostigma, *A. Rich.*			*				
74. Octodon, *Thonn.*							
1. O. filifolium, *S. et T.*	*		*				
2. O. setosum, *Hn.*	*						
75. Richardia, *Houst.*							
1. R. scabra, *L.*						*	Tropical America.
76. Mitracarpum, *Zucc.*							
1. M. scabrum, *Zucc.*	*	*	*	*			Cape de Verde Islands.

Botanical Name.	Upper Guinea.	North Central.	Nile-land.	Lower Guinea.	South Central.	Mozambique district.	External Range.
Tribe XVI. **Galieæ.**							
77. RUBIA, *Tourn.*							
1. R. cordifolia, *L.*			*				South Africa and Asia.
2. R. discolor, *Turcz.*			*				
78. GALIUM, *L.*							
1. G. biafræ, *Hn.*	*						
2. rotundifolium, *L.*			*				Natal, Cape de Verde Islands, Europe, &c.
3. G. Aparine, *L.*	*		*				Widely spread over the world and reaching the Arctic regions.
4. G. Mollugo, *L.*			*				Widely distributed over Europe.
5. G. simense, *Hochst.*			*				
6. G. Decaisnei, *Boiss.*			*				The Levant and Persia.
[Vaillantia hispida, *L.*			*				The Levant.]
79. BENZONIA, *Schum.*							
1. B. corymbosa, *Schum.*	*						
80. LEPIPOGON, *Bert. f.*							
1. L. obovatum, *Bert. f.*						*	Inhambane.
Pentas parviflora, *Hn.*						*	
Ixora coccinea, *L.*	* ?						East Indies.
Trichostachys vaginalis, *Hn.*	*						

The three last-named species have been added subsequently to the printing of the corresponding portion of the 'Flora of Tropical Africa.' Of the above enumerated 482 species, 238 occur in Upper Guinea, but not in the other districts of Tropical Africa, 6 in the North Central district only, 62 in Nile-land, 28 in Lower Guinea only, 7 in the South Central district only, and 55 only in the Mozambique district.

In comparing the numbers deducible from the tabular view, it must be borne in mind that the two central districts have been but very imperfectly explored, and that the greater part of Welwitsch's Angolan collection remains to be added, so that the number of species given as known to occur in Lower Guinea must be doubled.

The following genera are endemic:—*Corynanthe, Crossopteryx, Virecta, Otomeria?, Hekistocarpa, Pauridiantha, Temnopteryx, Pentaloncha, Stipularia, Heinsia, Dictyandra, Leptactina, Macrosphyra, Amaralia, Morelia, Zygoon, Galiniera, Empogona, Feretia,*

Summary of Preceding Distribution.

Tribes.	Number in Tropical Africa.				Number of Species.					
	Altogether.		Endemic.							
	Genera.	Species.	Genera.	Species.	Upper Guinea.	North Central.	Nile-land.	Lower Guinea.	South Central.	Mozambique District.
Naucleeæ	4	6	0	5	4	2	4	1	0	0
Cinchoneæ	3	4	2	4	2	0	2	3	0	1
Hedyotideæ	7	49	3	36	25	2	23	8	3	17
Mussændeæ	7	35	4	34	30	5	4	6	0	1
Hamelieæ	2	11	1	11	8	0	1	3	0	2
Gardenieæ	17	88	10	83	53	6	15	15	3	19
Guettardeæ	1	1	0	0	0	0	0	0	0	1
Alberteæ	6	10	4	10	4	1	2	0	0	6
Vanguerieæ	7	72	0?	68	38	1	22	13	6	7
Ixoreæ	5	65	1	62	47	1	8	10	0	8
Morindeæ	1	2	0	1	2	2	1	2	0	0
Psychotrieæ	7	95	1	92	71	4	9	4	0	11
Pæderieæ	1	1	0	1	0	0	0	0	0	1
Anthospermeæ	1	3	0	3	1	0	2	0	0	0
Spermacoceæ	7	29	2	19	18	3	16	4	0	7
Galieæ	3	9	0	3	2	0	8	0	0	0
dubiæ	2	2	1	1	1	0	0	0	0	1
Totals	81	482	29	433	306	27	117	69	12	82

Pouchetia, *Belonophora*, *Aulacocalyx*, *Lamprothamnus*, *Rhabdostigma*, *Psilanthus*, *Trichostachys*, *Hypodematium*, *Octodon*, and *Benzonia*.

In addition to these, 16 genera are confined to Africa and African Islands, including Madagascar and the Mascarene islands; 18 genera extend to Asia, the Indian Archipelago, Australia, or the Pacific islands, but do not reach either the West Indies or America; and 18 other genera have representatives in the New World.

RUBIACEÆ OCCURRING ELSEWHERE AS WELL AS IN TROPICAL AFRICA.

The following species of our flora have a distribution outside the limits of Tropical Africa; there are altogether 49 such species, which may be grouped according to the parts of the world to which they respectively extend. In the following lists the names of some species will occur more than once in the event of the species being found in different parts of the world.

1. *South Africa.*

Oldenlandia decumbens ...	Natal.
O. caffra	Cape and Natal.
O. Heynei	Natal.
O. capensis	Cape.
O. macrophylla	Natal.
Enterospermum littorale ..	? Inhambane, Mozambique.
Gardenia Thunbergia	Cape and Natal.
Tricalysia Sonderiana... ..	Natal.
Vangueria infausta	Cape, Natal, and Transvaal.
Fadogia Zeyheri	Transvaal.
Spermacoce stricta (var.) ..	Natal and Kafirland.
S. Ruelliæ....................	Delagoa Bay.
Rubia cordifolia	Caffraria and Natal.
Galium rotundifolium ...	Cape and Natal.
G. Aparine	Cape, &c.
Lepipogon obovatum	Inhambane, Mozambique.

2. *Mascarene Islands, including Madagascar and the Comoro Islands.*

Uncaria africana	? Comoro Islands.
Pentas carnea	Comoro Islands.
Oldenlandia Bojeri	Madagascar and Comoro Islands.
O. decumbens	Madagascar.

Oldenlandia caffra	? Madagascar.
O. Heynei	? Madagascar, &c.
O. corymbosa	Comoro Islands.
O. capensis	Madagascar.
O. trinervia	Madagascar, Mauritius, and Seychelles.
O. macrophylla	Seychelles and Comoro Islands.
Mussænda arcuata	Mauritius and Madagascar.
Gardenia Annæ	Seychelles.
Guettarda speciosa	Madagascar, Seychelles, and Comoro Islands.
Canthium bibracteatum	Mauritius, Seychelles, Comoro Islands, and Madagascar.
Vangueria infausta	Madagascar, &c.
V. edulis	Madagascar, &c.
Ixora odorata	Madagascar.
Morinda citrifolia	Seychelles.
Psychotria obtusifolia	Madagascar.
Triainolepis Hildebrandtii	North-west Madagascar.
Diodia breviseta	Madagascar.
Spermacoce stricta	Mauritius (*teste* Baker, Fl. Maurit. p. 159).
S. ramisparsa	Mauritius and Madagascar.
S. Ruelliæ	Madagascar.

3. *North Africa, Madeira, Canary, and Cape de Verde Islands.*

Oldenlandia Schimperi	Upper Egypt.
O. strumosa	Cape de Verde Islands.
O. corymbosa	Cape de Verde Islands.
O. hedyotoides	Upper Egypt.
Spermacoce globosa	Cape de Verde Islands.
Mitracarpum scabrum	Cape de Verde Islands.
Galium rotundifolium	Cape de Verde Islands.
G. Aparine	North Africa, Madeira, and Canary Islands.
Vaillantia hispida	North Africa and Canary Islands.

In addition to these, P. B. Webb, in 'Spicilegia Gorgonea,' page 132, gives from the Cape de Verde Islands, *Hedyotis* (*Oldenlandia*) *Burmannia*, R. Br. in Wall. Cat. n. 868; *H.* (*Oldenlandia*) *virgata*, Willd.; and *H.* (*Kohautia*) *stricta*, Sm.

The only species of our flora which extends to the Arctic regions is *Galium Aparine*; *G. Mollugo*, var. (*G. erectum*), extends to many parts of Europe.

4. *South Europe, Asia Minor, Armenia, Persia, Arabia, Beluchistan, and Scinde.*

Pentas carnea	Tropical Arabia.
Oldenlandia Schimperi	Arabia Petræa, Beluchistan, and Scinde.
O. capensis	Syria (*teste* Boissier, Fl. Or. iii. p. 11).
O. hedyotoides	Armenia.
Coffea arabica	? Tropical Arabia.
Gaillonia calycoptera	Arabia Petræa.
Galium rotundifolium	The Levant and Armenia (*teste* Boissier, Fl. Or. iii. p. 49).
G. Aparine	Widely spread.
G. Mollugo	Widely spread.
G. Decaisnei	The Levant and Persia.
Vaillantia hispida	South Europe, the Levant, and Persia.

5. *Eastern and Tropical Asia, China, Pacific Islands, and Australia.*

Argostemma pumilum	? Nipal, North-west Himalayas to Burma, and mountains of the Deccan peninsula of India.
Oldenlandia Heynei	East Indies.
O. corymbosa	Widely spread.
O. trinervia	East Indies.
Randia dumetorum	East Indies and Hongkong.
Guettarda speciosa	East Indies and Australia.
? Ixora coccinea	East Indies.
Morinda citrifolia	Tropical Asia, Pacific Islands, and Queensland.
Geophila reniformis ?	East Indies and Pacific Islands.
Spermacoce stricta	East Indies and Hongkong.
S. ramisparsa	India.
Rubia cordifolia	Widely spread in Asia.
Galium rotundifolium	Common among the hills of India.
G. Aparine	Himalayas.

The Indian species, *Ixora coccinea*, which is often cultivated, has been sent to the British Museum by the Rev. A. Robb from Old Calabar, without any note stating that it was cultivated there or had been introduced into Africa.

6. *Tropical America.*

Oldenlandia corymbosa ...	Widely spread.
Geophila reniformis?	Widely spread.
Diodia arenosa?	Brazil.
D. maritima	Cuba, Guatemala, &c.
D. breviseta	West Indies, Guyana, and Panama.
Spermacoce ramisparsa......	Brazil.
Richardia scabra	Widely spread.

Of the 482 species which have been described in the third volume of 'The Flora of Tropical Africa' or added in these notes, 250 are new or not previously described; and of the 81 genera amongst which the species are distributed, 3 genera are new.

DESCRIPTION OF THE PLATES.

Plate VII.

Pentas parvifolia, Hiern.

Fig. 1. An expanded flower, enlarged two diameters.
2. Corolla, laid open, showing the interior with the included stamens.
3. Diagram showing the valvate æstivation of the corolla.
4. Vertical section of the pistil and calyx, enlarged five diameters.
5. Horizontal section of the ovary, enlarged also five diameters.

Plate VIII.

Trichostachys vaginalis, Hiern.

Fig. 1. A flower-bud, enlarged four diameters.
2. Diagram showing the induplicate-valvate æstivation of the corolla.
3. An expanded flower, enlarged four diameters.
4. Corolla laid open, with vertical section of the ovary, enlarged also four diameters.
5. Stamens, front and side views, enlarged eight diameters.

D Blair del. et lith.
Mintern Bros. imp

PENTAS PARVIFOLIA, *Hiern.*

D Blair del et lith.

Mintern Bros imp

TRICHOSTACHYS VAGINALIS, *Hiern.*

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MISSOURI BOTANICAL

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1877.

Spicilegium Floræ Maroccanæ.

By JOHN BALL, Esq., F.R.S., F.L.S.

[Read March 1, 1877.]

(PLATES IX.–XXVIII.)

INTRODUCTORY OBSERVATIONS.

THE territory of Marocco extends from the Straits of Gibraltar, with the neighbouring part of the Mediterranean at its northern extremity, to the great desert on the southern side of the Great Atlas, and from the frontier of Algeria to the Atlantic coast of Northern Africa. Of this extensive region, about equal in extent to Spain, it may be truly said that none other so easy of access is so little known to geographers.

Although the chief ports are within a few days' journey from London or Marseilles, and are freely open to Europeans, so little is known of the interior that the maps, all founded on native information, which profess to represent the direction of the mountain-ranges and the course of the chief rivers, are hopelessly at variance, and of the best of them it may be said that the little positive knowledge we possess shows that even in its main features it is very wide of the truth.

The causes of our ignorance of the country are easily stated. The traditional policy of the government has been hostile to the admission of strangers into its terrritory; and as regards the natives of Christian States the difficulties have been aggravated by the fanatical character of a great part of the native population. But a still more serious, and probably a more enduring, obstacle to exploration arises from the fact that fully two thirds of the entire country is inhabited by independent tribes, who recognize no external authority, even when they accord a nominal supremacy to the Sultan of Marocco. These tribes, descendants of the original Berber population of Northern Africa, which has never been subjugated by any of the foreign rulers who have held the coast and the open country, occupy nearly all the mountain region Possessing, it would seem, many of the rude virtues common to such populations, they are constantly engaged in internal petty warfare, and always disposed to regard strangers not of their own tribe as lawful prey.

Even in the parts of Marocco where the natives have approached the limits of European civilization, access to mountain districts is all but impossible to strangers. The fine peaks of the Beni Hassan, within sight of the rock of Gibraltar and easy reach of Tangier and Tetuan, have never been approached by a traveller; and Sir John Drummond Hay, whose knowledge of the people and influence amongst them surpass that of any other European, pronounced against the feasibility of the excursion which we earnestly desired to make in that direction.

As a necessary consequence of what has been stated, our knowledge of the Flora of Marocco has been extremely limited, and, in spite of what has been done during the last few years, is still most imperfect; and the time is yet distant when it will be possible to give more than a rude outline of the relations between the vegetable population and those of the surrounding regions.

The earliest notice that I have found of botanical research into the Marocco Flora is in the 'Istoria Botanica' of Zanoni (Curator of the Botanic Garden at Bologna), published in 1675. He had received plants and seeds from Tangier from a Mr. Alexander Balaam, who appears to have been a merchant trading with Tangier during some part of the time when that town was held by the Portuguese and the English. The next contribution, and a more considerable one, is contained in a list published (1696) in the 19th vol. of the 'Philosophical Transactions' (p. 239 *et seq.*), but drawn up in 1673 by Mr. Spotswood, a surgeon who lived there during the English occupation, and gathered plants which he gave to the same Mr. Balaam and to Dr. Morison at Oxford There is some difficulty in identifying many of the species named; and I have not thought it worth while to cite the plants contained in Mr. Spotswood's list.

After the evacuation of Tangier by the English, under circumstances little creditable to our national honour, communication between Europe and Marocco became more unfrequent than ever, and, excepting some occasional negotiation for the release of Christian captives, seems to have almost ceased. At the latter end of the last century relations between some European powers and the Marocco Government became more frequent and almost amicable, so that travelling in the country seems to have been easier than it has been in more recent times. A French botanist, M. Broussonnet, who also visited the Canary Islands and some parts of Spain, spent some time in Marocco during the last ten years of the century. He explored the neighbourhood of Mogador and Tangier, visited several of the ports on the Atlantic coast, and made at least one journey into the interior, in which he reached Fez and Mequinez. Broussonnet sent specimens to the chief botanists of his day—to Willdenow at Berlin, to Desfontaines at Paris, to Gouan at Montpellier, and to Cavanilles at Madrid. Most of the latter were published by that excellent botanist in the 'Anales de Ciencias Naturales,' a now scarce periodical which secured for Spain a temporary place in the republic of science, which she did not long retain. A few of Broussonnet's plants were also published by Willdenow in his edition of the 'Species Plantarum;' and a few others are referred to in Desfontaines's 'Flora Atlantica;' but the greater part of his collections, now in the museum at Montpellier, remained unexamined until M. Cosson visited that city. The results of the latter's study of that collection form a portion of the materials, which we hope soon to see published. Unfortunately Broussonnet seems to have been somewhat careless respecting the localities whence his specimens came, and to have sometimes intermixed those from the Canary Islands, South Marocco, Tangier, and Spain. Several undoubted errors that have been detected throw doubt on the authenticity of his localities when unconfirmed by other authorities.

About the time of Broussonnet's visits to Marocco Mr. Schousboe was appointed as Danish consular agent at Mogador, and subsequently at Tangier. He was an active and intelligent observer, who studied carefully the vegetation of both the districts above named. Besides this he collected a few plants in the course of a journey in which he reached the city of Marocco, and another which led him to Fez and Mequinez. He was the author of the first attempt at a Flora of Marocco, the first portion of which, including the Linnean classes from Monandria to Enneandria, with a few new species of other classes, was published in Danish and in German in 1801. Unfortunately, the work remained unfinished. Although Schousboe lived for many years afterwards chiefly at Tangier, and added very largely to his collections, I am not aware that he worked at the continuation of the work, which, in the German edition, bears the title "Beobachtungen über das Gewächsreich in Marokko." Schousboe's herbarium is preserved at Copenhagen; but the large collection of his duplicates passed not long ago into the possession of M. Cosson, who has liberally given sets of them to the Kew Herbarium and to myself.

Early in this century a French ecclesiastic, the Abbé Philippe

Durand, visited Marocco, reached Fez and Mequinez, and, so far as I know, alone of European travellers traversed some part of the great forest of Mamora, respecting which many a strange story circulates among the natives of Marocco.

In 1809 was published the first edition of the work which gives by far the fullest account of Marocco that has yet appeared, 'An Account of the Empire of Marocco,' by James Grey Jackson. Mr. Jackson lived for the greater part of sixteen years in South Marocco; he became familiar with the language and manners of the people, and must have acquired more of their confidence than any previous European visitor, as he not only travelled by several routes through the lower country near the coast, but was allowed to join a military force proceeding over the Atlas from Marocco to Tarudant.

Mr. Jackson does not, however, seem to have ventured on entering the city of Tarudant; nor, though he approached Wadnoon, did he actually visit that place.

Though not a naturalist, Jackson was a very intelligent observer; and on some points, especially regarding the curious cactoid Euphorbias of South Marocco, he has given information interesting to botanists.

The next contributor to the knowledge of the Marocco flora was M. Salzmann, an active collector who, after previous visits to other interesting spots in the Mediterranean, spent a considerable time at Tangier in 1825, and seems to have explored very carefully the district within convenient reach of that city. Salzmann does not appear to have had much scientific knowledge; but he was a sharp-eyed collector, and often detected differences between plants found by him and allied species, with which they had been confounded by other botanists. Several of these were published by the late M. A. P. Decandolle, then at the zenith of his scientific fame and authority, who had shortly before commenced the publication of that colossal work, the 'Prodromus Systematis Naturalis.' Others remained unpublished, except for the manuscript name attached to them by Salzmann. As, however, his collections were sold, and were sufficiently numerous to supply the demands of the chief botanists of his time, this has been, I think, justly regarded as equivalent to publication, and as constituting a title to priority over names subsequently given by other botanists.

Very complete sets of Salzmann's Tangier plants were contained in the herbarium of Mr. Bentham (presented by him to the national collection at Kew), and in that of my late lamented friend M. Jacques Gay (purchased by Dr. Hooker, and also given to the Kew Herbarium); so that I have had the opportunity of examining original specimens of nearly all Salzmann's plants.

In 1827 my excellent friend the late Philip Barker Webb spent three weeks at Tangier, and then visited Tetuan, where he was able to ascend two of the neighbouring mountains, and to discover amongst other novelties a new genus of Cruciferæ, for which, up to the present time, no other locality is known. His collections, preserved along with the remainder of his great herbarium at Florence, have been examined by M. Cosson and by myself.

During the years between 1840 and 1870 many botanists touched at Tangier, including my friend M. Boissier, with the late M. Reuter, Dr. Lagrange, M. Blanche, M. Marés, and M. Jourdan. Several of the plants collected by MM. Boissier and Reuter were described by them in a little volume styled 'Pugillus Plantarum Novarum Africæ borealis Hispaniæque australis.' In that work the criteria for the admission of new species, so justly maintained in the great works on which M. Boissier's fame depends, were somewhat unduly relaxed.

In 1859 the late Rev. R. T. Lowe contributed to the 'Proceedings' of this Society a list of plants observed by him in the immediate neighbourhood of Mogador; and most of these are preserved in the herbarium bequeathed by him to the Royal Gardens at Kew.

In June 1851 I made an attempt to reach the higher summits of the Lesser Atlas in the neighbourhood of Tetuan; but, owing to the disturbed condition of the district, I was limited to the immediate neighbourhood of the city, which, however, offers many species of interest not found about Tangier.

In 1869 my indefatigable friend, Mr. George Maw, was somewhat more successful than myself, and was permitted to ascend part of the Beni Hosmar, previously visited by Webb.

In 1867, chiefly through the influence and with the aid of M. Cosson, whose intimate acquaintance with the flora of Northern Africa is unrivalled by any competitor, the successful botanical traveller Mr. Balansa was despatched to Mogador, with the object of attempting to investigate the flora of the Great Atlas range as far as circumstances would permit. Although receiving every assistance from the French diplomatic agents in Marocco, his progress was impeded at every step; and after about a fortnight he was forced to abandon the attempt and return to Mogador. He nevertheless was able to collect a large number of the new and remarkable species which characterize the skirts of the great mountain-range and the lower mountains that diverge from the main chain.

The short time at his disposal enabled M. Balansa to collect so few duplicates that many of the new species subsequently described by M. Cosson are not to be found in the principal herbaria of Europe, and several of these, as well as the other plants of his journey, are preserved only in the magnificent herbarium of M. Cosson.

Along with other materials scarcely to be found outside that herbarium, I should mention a collection made by M. Warion, in the medical service of the French army, a good observer and collector, who gathered many plants on the eastern frontier of Marocco, adjoining the French province of Oran.

Early in the year 1871 Dr. Hooker, who had long felt a desire to explore the range of the Great Atlas, applied to Earl Granville, then Secretary of State for Foreign Affairs, to use the influence of the English Government at the court of Marocco to obtain the necessary permission of the Sultan. The information received from Sir John Drummond Hay, our minister at the court of Marocco, was so far favourable that Dr. Hooker determined to leave England in the spring of that year; and I was fortunate enough to be able to accompany him, along with our mutual friend Mr. George Maw, who, as well as myself, had already made an attempt to visit the extremity of the chain of the Lesser Atlas of Marocco in the neighbourhood of Tetuan.

We received before starting valuable information and aid from our excellent friend M. Cosson, who was kind enough to prepare a manuscript list of all the plants then known or believed to inhabit the Marocco territory, as far as his unequalled means of information would go.

In our subsequent course we were under deep obligations to our active and energetic representative in Marocco already named, and to all the British consular agents on the coast, and especially to the late Mr. Carstensen, then Vice-consul at Mogador, through whose hospitality and active assistance our stay was rendered agreeable, and our journey into the interior materially expedited.

After three days passed at Tangier, during which we made an excursion to Cape Spartel, and thence along the Atlantic coast to the so-called Cave of Hercules, we started for Tetuan, which we reached early on the 12th of April. On the following day we ascended the highest of the picturesque mountains that enclose the verdant valley of Tetuan, called Beni Hosmar, the same which had been visited more than forty years before by the late Mr. Webb. Although the season was not yet sufficiently advanced, we collected nearly all the species found by our predecessor, with several others of much interest. After another day well spent on the rocky ground in the immediate neighbourhood of the city, we started on the 15th to ride along the coast to Ceuta, thereby adding some additional species to our rapidly growing collections. The botanical exploration of the coast between Ceuta and Tangier, on the seaward slopes of the Angera Mountains, would be of great interest; and until this has been effected it will not be possible to say whether *Rhododendron ponticum*, *Helianthemum lasianthum*, and several other remarkable species now known on the northern side of the Straits of Gibraltar are really absent from the southern shores. The country, however, is considered too unsafe, especially for travellers starting from Ceuta, and we traversed the Straits in the felucca, by which the garrison and population of Ceuta keep up communication with Algeciras. Two days' unexpected detention on the Spanish side was not ill employed in a survey of the spring vegetation of the hills above Algeciras and the rock of Gibraltar. Returning to Tangier we were detained two days more, which were employed in putting in order and further increasing our collections. Mr. Maw, who had returned direct from Tetuan to Tangier, made in the interval two fruitful excursions to some swampy brackish lakes about 14 miles S.S.W. of the latter city.

Having at length received the necessary letter from the Sultan to the Governor of Mogador, we left Tangier on the 20th of April in the French steamer 'Vérité,' bound for the Atlantic ports of Marocco and the Canary Islands. On the following day we lay off Rabat, but, owing to the heavy swell, were unable to land. On the following day, however, we landed at Casa Blanca, or Dar el Beida, a place not mentioned by any of the botanists who have visited the coast. Having made a tolerably large collection on the bare hills near Casa Blanca, and been hospitably received by Mr. Dupuis, the British vice-consul, we continued our voyage to

Mogador, not having any favourable opportunity for landing at Mazagan or Saffi. We reached Mogador on the 25th of April; and after attending to the requisite arrangements for our journey we visited the curious neighbourhood of that town. The vegetation of the neighbourhood, and especially that of the low rocky island which forms the port, had suffered severely from the periodical visitation of locusts which had lately passed over the district; but we were able to secure most of the interesting species found by our predecessors; and on the 29th we started for the interior, making a slight detour by keeping southward near the coast for some five or six miles, and thereby making fuller acquaintance with the Argan forest, and then across the country till we rejoined our tents and baggage outside the walls of the extensive castle of the Governor of Shedma. During most of the day we had traversed the northern part of Haha, a very large province that extends along the coast from Mogador to Agadir and to the skirts of the Atlas chain. It is needless to say that on this, as on each succeeding day of our ride to Marocco, we encountered many interesting plants, some altogether new to us, some known only from dried specimens, and several hitherto undescribed. On the evening of the 30th we reached Aïn Oumast, a spring where travellers necessarily encamp, as for many miles eastward the country is an arid stony desert, closely resembling in aspect, as well as in its vegetation, some parts of the Sahara.

On the 1st of May we encamped at Sheshaoua, a veritable oasis, where in the shade of fruit-trees we were surprised to find many common European species. The soil surrounding it appears to contain much gypsum, and produced an unusual proportion of Chenopodiaceæ.

A long ride on the following day took us to Misra ben Kara, a place near the banks of a considerable stream that flows northward from the Great Atlas; and on the following day a short but hot ride across the glowing plain took us to the ancient capital of Marocco.

While detained in Marocco Mr. Maw made an interesting excursion to the nearest of some rocky hills of metamorphic rock that rise a few miles N.W. of the city. He brought back a new species of *Boerhavia*, *Forsåkhlia tenacissima*, *Andropogon laniger*, and several other species not hitherto seen by us.

On the 8th of May, after encountering various tokens of unfriendly disposition on the part of some of the native authorities, we turned our faces towards the chain of the Great Atlas, which rises in full view of the city. Early on the following day we reached Tasseremont, and there began to make acquaintance with the special flora of the Great Atlas, gathering several of the species first seen by M. Balansa, as well as some others which he had not met. Being unable to continue our course towards the high range immediately south of Tasseremont, we turned S.W., and encamped on the same evening near a place called Ourika, at the opening of a valley to which we have given the same name. This valley appears to penetrate deeply the main chain of the Atlas, which rose patched with snow in the background. We naturally desired to ascend its course, and started on the 10th of May for that purpose. The scenery and the vegetation were full of interest; and it was with much annoyance that, at the pressing instance of our escort, who alleged an insurrection among the people of the upper valley, we were forced to return to a village near the opening. On the following day we skirted the base of the mountains through a district called Reraya, and encamped near to a stream descending from the main chain. It now became clear that there existed an organized plan on the part of our escort, in concert with the native chiefs, to prevent us from accomplishing our design of penetrating to the interior of the Great Atlas chain. The firmness of Dr. Hooker prevailed, however, over the reluctance of the escort; and the circumstance that we were able to secure the cooperation of a native Berber Sheik, finally enabled us to do a good deal more than the latter originally contemplated. On the following day we crossed a low range dividing the stream last mentioned from a parallel one which flows through the valley, which, from the name of the tribe inhabiting it, we called Aït Mesan*.

On the following day the friendly Sheik undertook to conduct us *to the snow*; and, as we had seen no snow save in patches on the highest part of the chain, this was taken to mean the ascent of at least one of the higher summits. On the 13th we followed a steep and difficult track, amid a vegetation mainly new to us,—where it was tantalizing to be content with a specimen or two that could be snatched while pressing onward—and some time after midday reached the last village, called Arround, standing at nearly 7000 feet above the sea-level, a short distance beyond a barrier partly composed of rock and partly of ancient moraine, the only undoubted moraine seen by us in the Atlas. Here the scenery assumed a singularly stern character. The floor of the valley extends for some way nearly level, and then slopes gradually upward, enclosed on every side but one by steep and rugged peaks, nearly bare of snow. But in the hollows and recesses of the valley, at no great height above the village, snow lay in various directions; and towards one snow-bed our guide, in accordance with his promise, led us. Although many plants were not yet in flower, we found at every step something of engrossing interest—among the novelties that which most struck us being the curious *Chrysanthemum* with scarious involucre, which I have called *Chrysanthemum Catananche*. Our return to our camp in the lower valley in great part by night, and in almost pitch darkness, was difficult and even somewhat dangerous.

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* To the best of my belief the Aït Mesan valley, as well as the parallel and nameless one in which we camped on the 11th of May, is included within the district known as Reraya; and accordingly the labels for all Dr. Hooker's plants collected in both valleys bear the latter name. As there appeared to be no doubt that the valley wherein we passed five days is correctly named Aït Mesan, I have adopted that name in my labels, and have reserved the name Reraya for the valley first reached by us and the ridges which we traversed in approaching and departing from it. I have mentioned this, as without such explanation botanists might hereafter suppose that plants gathered at the same time and place by Dr. Hooker and myself came from two distinct localities.

Our object now was to persuade the Sheik to let us sleep at the village of Arround, whence we felt that we could in one way or other attain the higher region, and thus accomplish in some measure the main object of our journey. After some negotiation this plan was arranged; and on the 15th of May, before the sun had well risen, we started from Arround with a very threatening sky, determined to ascend as far as might be possible. Fortunately the Sheik did not insist on accompanying us, but appointed two guides with injunctions not to let us go beyond a small stone hut at the base of the ascent to the pass of Tagherot. It should have been stated that on our first visit two days before, we ascertained that a somewhat frequented track leads from the head of Aït Mesan to the upper part of the Sous valley on the opposite side of the main chain. The weather had become cold and rainy when we reached the hut above referred to. Here our guides endeavoured to make us understand that it was too dangerous to go further; and we made no show of resistance, but encouraged them to make a fire in the hut while we collected plants round about. As soon as they were thus engaged we started up the track, which throughout a steep ascent of over 3000 feet is well engineered, sometimes in regular zigzags, such as are seen in Switzerland or Tyrol. It is needless to say that every step in our ascent was of engrossing interest; but the weather grew steadily worse, as the rain became sleet, and then snow. We were overtaken by our guides, who used every means of threat and entreaty to induce us to return: for a time we silenced them by some silver coins; but they were in a pitiable state as we approached the summit. Except on some ledges of rock it was no longer possible to get at plants; and the snow driven by a violent wind made it impossible to see more than a few feet. Mr. Maw alone reached the actual crest of the ridge, but could see nothing. I, as well as Dr. Hooker, was a little lower down; and when Mr. Maw returned we readily consented to forego the barren honour of touching the summit, which is, by our observations, about 11,500 feet above the sea.

On the following day we returned to our camp, the valley above Arround being deep in snow, and no more botanizing being there practicable. The following day was needed to arrange and pack our collections; and on the 18th we reached a place called Sektana, near the base of the main range, of which it commands a very fine view. On the next morning Mr. Maw left us, to return to England, taking with him two of our escort; while we proceeded westward by a place called Gurguri, and, after crossing the wide stony bed of a torrent called Oued en Fisk, reached Amsmiz, the largest place we had yet seen on the skirts of the Atlas. Here, after some trouble, we succeeded in making another excursion into the interior of the range; and from a village near the head of the valley, where we slept, we were able on the 23rd of May to ascend the highest summit near its head, called Djebel Tezah. The chain has here diminished considerably in height; for while the Tagherot pass is as nearly as possible 11,500 feet in height, the summit of Djebel Tezah only attains to about 11,000 feet. Thence we were able to see across the great valley of Sous, and for the first time beheld the parallel range, or Anti-Atlas, some 60 miles distant, which, at a rough estimate, can scarcely attain the height of 10,000 feet.

Returning to Amsmiz, our course lay through the sloping plain at the foot of the mountains to Mzouda; and on the 26th we passed Keira (where M. Balansa had found a friendly reception), and encamped near the village of Seksaoua. Two days, on one of which we ascended a neighbouring mountain to the height of some

4600 feet above the sea, were very productive in species not before seen, and one or two of them altogether new. We next went to Milhaïn, psssing on the way Imintenout, where the main track from Marocco to Tarudant enters the mountains. Our next camp was outside the Kasbah or Castle of the Governor of Mzouda, then engaged in local war with the Governor of Haha. This affair caused us, in compliance with an urgent letter forwarded by courier from Mr. Carstensen, to alter our route and proceed northward, to a place called Mskala, on the border of the provinces of Haha and Shedma. Here the Governor of the latter province was encamped with a considerable force of his retainers, watching the progress of the petty war pending between the neighbouring tribes. On the next evening we met Mr. Carstensen by appointment at the Kasbah of the Governor of Shedma; and instead of returning direct to Mogador, we proceeded together on the 1st of June through a pleasant country to Aïn el Hadjar, a place where numerous springs break out from the foot of the Djebel Hadid, or Iron Mountain, a long, flat-topped ridge that rises near the coast some 15 miles north of Mogador. Although the heat was by no means oppressive, the season was rather far advanced for seeing the vegetation to full advantage; but we passed a not unprofitable day upon the mountain, the chief drawback on our enjoyment being the extraordinary number and variety of spiny and prickly bushes which cover its slope. One of these, which escaped the vigilant eyes of M. Balansa when he visited the mountain, is the widely spread tropical *Celastrus*, which, when found in the south of Spain, was taken to be a new species and called *C. europæus*, but which Professor Oliver has shown to be the *C. senegalensis* of Lamarck. We had already gathered this plant near the foot of the Great Atlas; but until then it was not known to grow anywhere between Senegal and the south of Spain.

On June 3rd we returned to Mogador, and were again hospitably entertained by Mr. and Mrs. Carstensen, until the arrival of a British steamer enabled us to take our passage homeward. We were able to spend a great part of one day at Saffi, where we embarked cargo, and, among other plants of interest, were enabled to add to the short list of Canary-Island plants that extend to the African coast the curious fleshy *Zygophyllum Fontanesii*, figured by Webb in the 'Phytographia Canariensis.'

We also landed at Mazagan, and had time enough to make a short walk along the shore near that town, and add two or three species to our list of the coast-flora.

On reaching Tangier Dr. Hooker's engagements forced him to proceed at once to Gibraltar, and thence return to England. I was enabled to spend one day at Tangier, and after an absence of not quite two months found the aspect of the vegetation wonderfully altered, since the appearance of a large number of species not before seen gave the neighbourhood an aspect of complete novelty. The flowers of the *Cisti* had disappeared; but in their place were many Compositæ and Labiatæ and other summer-flowering species. The most conspicuous was the magnificent *Salvia bicolor*, which attains a height of 7 or 8 feet, each of its numerous branches bearing the conspicuous white-and-blue flowers to which it owes its name.

During the period of our stay in the interior we had arranged, through the kind assistance of Mr. Carstensen, to send two natives to collect plants near Agadir, about 80 miles south of Mogador, near to Cape Guer, where the Great Atlas range finally subsides into the Atlantic Ocean. The result, which seemed to show that the character of the vegetation does not vary much along this part of the coast, yet sufficed to prove that with due perseverance something might be accomplished towards extending our knowledge of the Marocco flora through native collectors.

M. Cosson, having succeeded in securing the active assistance of the late M. Beaumier, French Consul at Mogador, and sparing on his own side neither trouble nor expense to effect his object, has caused two native collectors to travel into the interior for several successive seasons. One of these, a very intelligent Jew, a native of Akka, a place on the southern side of the Great Atlas between the rivers Sous and Noun, has been chiefly employed in the region, utterly inaccessible to European travellers, between the oasis of Akka and the neighbourhood of the Atlantic coast. The other, a Schleuh by birth, and a native of the mountains, has been mainly engaged in making collections in a district nearly adjoining the portion of the Great Atlas which we were able to explore. The collections first sent home were in indifferent condition, and the specimens incomplete; but M. Cosson's perseverance overcame all difficulties, and the collections lately received would do credit to a professed naturalist.

When I consulted my excellent friend M. Cosson on the subject of the present publication, he was good enough to suggest that we should jointly bring out a work which might bear to the future Flora of Marocco the same relation that Desfontaine's 'Flora Atlantica' will hold to the, I trust, not distant Flora of Algeria.

I may at once say that I have no claim whatever to approach M. Cosson's extensive and accurate knowledge of the flora of North Africa and South-western Europe, and I feel that it would be a high honour to be associated with him in such a work as that suggested; but seeing that circumstances have placed me in possession of a considerable mass of materials that must go towards its production, I have thought it better without further delay to present it to this Society under the title "Spicilegium Floræ Maroccanæ," accompanied by lithographed plates illustrating some of the new species described, presented to the Society jointly by Dr. Hooker and myself.

I trust that M. Cosson will carry out his intention of speedily publishing in a compendious form the rich materials for the Flora of Marocco, most of which are in his exclusive possession, and thus preparing the way for a more complete work.

In the following descriptive catalogue I have, as a rule, avoided referring to plants not yet published by M. Cosson, excepting where this was necessary to name or illustrate specimens collected by us or other recent travellers, although, through his liberality, I am in possession of many species not enumerated in the following pages.

Although I feel that the time has not yet come for attempting a general survey of the Marocco flora, and the materials for discussing the subject must remain further incomplete until the publication of the long expected Flora of Algeria, it would be inexpedient to close these introductory remarks without a brief view of the geographical relations of the Marocco species to those of the surrounding regions. For this purpose I have enumerated in tabular form the Natural Orders indigenous to Marocco under headings that show the distribution of the species hereafter enumerated.

The following is a tabular view of the Marocco flora, showing:—1. The whole number of species belonging to each Natural Order found in Marocco; 2. The number of these which are cosmopolitan or extend in the Old World beyond the Mediterranean region; 3. Species of the Mediterranean region including Macaronesia; 4. Mediterranean excluding Macaronesia; 5. Confined to Western Mediterranean region excluding Macaronesia; 6. Species exclusively confined to Algeria and Marocco; 7. Species confined to the Iberian peninsula and Marocco; 8. Species known only in Macaronesia and Marocco; 9. Species peculiar to Marocco:—

Natural Order.	Total of Marocco species.	Cosmopolitan or Temperate Old World.	Mediterranean region including Macaronesia.	Mediterranean region excluding Macaronesia.	Western Mediterr. region excluding Macaronesia.	Algeria and Marocco.	Iberian peninsula and Marocco.	Macaronesia and Marocco.	Peculiar to Marocco.
Ranunculaceæ	33	11	5	9	4	1	1	...	2
Berberideæ..............	1	...	...	1					
Papaveraceæ	21	10	...	4	2	1	2	...	2
Cruciferæ	73	25	12	16	2	5	3	...	10
Capparideæ	1	...	...	1					
Resedaceæ	13	3	...	2	1	1	2	...	4
Cistineæ	28	3	2	13	2	1	6	1	
Violarieæ	3	1	...	...	1	...	...	...	1
Polygaleæ	5	...	...	3	...	...	...	...	2
Frankeniaceæ	2	2							
Caryophylleæ	69	29	9	13	6	2	5	1	4
Portulacaceæ...........	2	2							
Tamariscineæ	4	1	...	2	...	...	...	...	1
Hypericineæ	7	1	...	1	5				
Malvaceæ	12	3	1	5	2	...	1		
Lineæ	10	3	2	...	3	...	1	...	1
Zygophylleæ	3	...	1	1	...	...	...	1	
Geraniaceæ	21	9	4	4	3	...	...	...	1
Rutaceæ..................	4	1	...	2	...	...	...	...	1
Celastrineæ	1	1							
Rhamneæ	4	...	...	3	1				
Ampelideæ..............	1	...	...	1					
Acerineæ	1	...	...	1					
Anacardiaceæ	4	...	1	2	...	1			
Coriareæ	1	...	...	...	1				
Leguminosæ	189	27	46	37	24	11	16	3	25
Rosaceæ..................	16	7	1	5	1	...	1	...	1
Saxifrageæ..............	5	3	...	1	...	...	...	...	1
Crassulaceæ	18	7	...	1	5	...	1	...	4
Droseraceæ	1	...	...	...	...	...	1		
Halorageæ..............	2	2							
Myrtaceæ	1	...	1						
Lythrarieæ..............	6	2	2	2					
Onagrarieæ	3	3							
Cucurbitaceæ...........	4	1	1	2					
Ficoideæ..................	4	2	1	1					
Umbelliferæ	86	17	11	18	20	5	4	...	11
Araliaceæ	1	1							
Caprifoliaceæ...........	7	3	2	1	1				
Rubiaceæ	30	8	3	9	4	3	1	...	2
Valerianeæ..............	8	2	1	5					
Dipsaceæ	6	1	1	...	3	...	...	...	1
Totals	711	191	107	166	91	31	45	6	74

Natural Order.	Total of Marocco species.	Cosmopolitan or Temperate Old World.	Mediterranean region including Macaronesia.	Mediterranean region excluding Macaronesia.	Western Mediterr. region excluding Macaronesia.	Algeria and Marocco.	Iberian peninsula and Marocco.	Macaronesia and Marocco.	Peculiar to Marocco.
Brought forward	711	191	107	166	91	31	45	6	74
Compositæ:									
Corymbiferæ	83	10	19	17	11	9	1	1	15
Cynaraceæ } 208 ..	58	6	8	12	13	4	5	...	10
Cichoriaceæ	67	13	14	14	10	6	5	1	4
Lobeliaceæ	1	...	...	...	1				
Campanulaceæ	13	1	3	...	2	...	3	...	4
Ericaceæ	9	4	1	1	2	...	1		
Sapotaceæ	1	...	...	...	...	...	...	...	1
Plumbagineæ	18	3	...	6	4	...	2	...	3
Primulaceæ	7	3	...	1	2	...	1		
Oleaceæ	7	1	1	3	1	1			
Apocynaceæ	2	...	...	1	1				
Asclepiadeæ	3	...	...	1	1	...	...	...	1
Gentianeæ	8	5	3						
Boragineæ	35	9	5	8	7	1	1	1	3
Convolvulaceæ	10	4	3	1	2				
Solanaceæ	11	4	4	3					
Scrophularineæ	61	16	5	9	9	4	7	1	10
Orobancheæ	12	1	1	2	3	...	3	...	2
Lentibularieæ	1	1							
Acanthaceæ	1	...	1						
Verbenaceæ	3	1	1	1					
Selagineæ	1	...	...	1					
Labiatæ	81	21	6	10	14	2	5	...	23
Plantagineæ	11	2	5	3	...	1			
Nyctagineæ	2	1	...	...	...	...	...	...	1
Illecebreæ	10	4	2	2	2				
Amaranthaceæ	6	4	...	1	...	1			
Chenopodiaceæ	20	13	4	1	...	...	...	2	
Polygoneæ	17	9	3	2	2	...	...	...	1
Thymeleæ	7	2	1	1	1	...	2		
Laurineæ	1	...	...	1					
Santalaceæ	3	1	2						
Cytineæ	1	...	1						
Aristolochieæ	3	...	1	...	2				
Euphorbiaceæ	24	7	3	4	3	...	...	...	7
Urticaceæ	7	4	1	1	1				
Ulmaceæ	2	2							
Cupuliferæ	4	...	...	3	...	...	1		
Salicineæ	6	4	...	1	...	...	...	1	
Ceratophylleæ	1	1							
Gnetaceæ	2	...	1	1					
Coniferæ	7	1	2	2	1	1			
Orchideæ	18	7	2	9					
Irideæ	14	3	2	4	2	...	1	1	1
Amaryllideæ	11	...	...	4	2	...	4	...	1
Totals	1381	359	212	297	190	61	87	14	161

Natural Order.	Total of Marocco species.	Cosmopolitan or Temperate Old World.	Mediterranean region including Macaronesia.	Mediterranean region excluding Macaronesia.	Western Mediterr. region excluding Macaronesia.	Algeria and Marocco.	Iberian peninsula and Marocco.	Macaronesia and Marocco.	Peculiar to Marocco.
Brought forward ...	1381	359	212	297	190	61	87	14	161
Dioscoreæ	1	1							
Alismaceæ	3	3							
Juncagineæ	1	...	...	1					
Potameæ	3	3							
Palmæ	2	1	...	1					
Typhaceæ	1	1							
Aroideæ	3	1	1	1					
Lemnaceæ	1	1							
Liliaceæ..................	43	7	11	12	7	2	4		
Melanthaceæ	4	2	...	1	...	..	1		
Smilaceæ	3	1	1	1					
Asparageæ	7	...	3	1	1	...	...	1	1
Junceæ	15	12	...	1	1	...	...	...	1
Cyperaceæ	25	18	1	2	2	...	1	...	1
Gramineæ	134	57	25	32	15	1	3	...	1
	1627	467	254	350	216	64	96	15	165
Dicotyledones	1338	349	208	280	186	61	82	13	159
Monocotyledones	289	118	46	70	30	3	14	2	6

It is obvious to all who have considered the subject, that a mere enumeration of the species known to exist in a given region gives of itself but little information as to the character of its flora; nevertheless the statistical method, to which somewhat too much importance has, in my opinion, been attributed, does lead towards some probable conclusions, and gives indications which may not be unimportant.

Taken as a whole, the figures in the preceding Table show very distinctly that the Marocco flora is altogether a portion of that great Mediterranean flora which, with local peculiarities, extends from the Indus to the Atlantic Islands. Excluding all the species widely spread beyond those limits either through the tropics or the temperate zone, we have remaining 1160 species, of which 820 are common to some considerable portions of the Mediterranean region. Of the remaining 340 species about one half, or 165, are peculiar to Marocco. Next come 96 common to Spain and Marocco, nearly all of these being, as far as we know, confined to the neighbourhood of Tangier and Tetuan. A much smaller proportion, only 64, are common to Algeria and Marocco, and only 15 species are confined to the Macaronesian Islands, under which name I include Madeira along with the Canary Islands. This proportion will doubtless be somewhat increased when we know more of the coast vegetation between Agadir and Wadnoun; but the figures tend to show that the separation of those islands must date from a period even geologically speaking remote.

With a view to exhibit further the characteristics of the Marocco flora it may be convenient to give a summary of the results of the foregoing Table, showing the absolute number of species or subspecies of each of the principal Natural Orders, and the percentage which they bear to the total number of Phanerogamic species, this being 1627.

	Total number of species.	Percentage proportion.
Dicotyledones	1338	82·2
Monocotyledones	289	17·8
Compositæ	208	12·8
Leguminosæ	189	11·6
Gramineæ	134	8·2
Umbelliferæ	86	5·3
Labiatæ	81	5·0
Cruciferæ	73	4·5
Caryophylleæ	69	4·2
Scrophularineæ	61	3·7
Liliaceæ	43	2·6
Boragineæ	35	2·2
Ranunculaceæ	33	2·0
Rubiaceæ	30	1·8
Cistineæ	28	1·7
Cyperaceæ	25	1·5
Euphorbiaceæ	24	1·5

It will be seen that the proportion of Compositæ, Leguminosæ, and Liliaceæ is unusually large, whilst that of Gramineæ and Ranunculaceæ is exceptionally small. Still more characteristic of the Marocco flora is the small proportion borne by some natural orders that usually take a prominent place among the vegetable population in mountain countries in the north temperate zone. Thus we have of Rosaceæ but 16 species, of Saxifrageæ 5 species, of Primulaceæ 7 species, of Gentianeæ 8 species, and of

Cyperaceæ only 25 species; and very few of these belong to subalpine or alpine types.

In my opinion, however, the general numerical results obtained from tabular statements, such as those I have already given, are very likely to mislead unless critically controlled. The boundaries of states are determined by historical accidents, and, to a slight extent only, by physical geography; and it often happens that in general summaries the characteristics of what form natural divisions of the earth's surface are masked by these being thrown in along with others wherein different conditions predominate.

Bearing in mind that the entire of Marocco in a botanical sense forms part of the Mediterranean region, it includes within its boundaries several provinces, partly corresponding to geographical limits, which exhibit well-marked features, and are distinguished by a considerable number of species not common to other provinces.

Speaking broadly, and excluding the wide-spread species, which belong to two types—1st, those widely spread through the cooler temperate zone, either Old World or extending to the New World, and, 2nd, tropical species which extend more or less widely into the warmer temperate regions—there are within the Marocco territory five elements, of which four correspond more or less closely to geographical limits.

The Mediterranean flora, including within that term species confined to that region and widely spread throughout it, forms what may be considered as the substratum extending throughout the whole territory, excepting only the higher range of the Great Atlas. Overlying, so to say, this substratum, we find in the northern extremity of Marocco a strong infusion of another element, which is now generally denominated the Peninsular flora. This is recognizable, even to the unscientific observer, by the number of conspicuous flowering shrubs, including, along with more wide-spread species of those genera, several showy species of *Cistus* and *Erica*, with numerous herbaceous plants, such as the curious *Drosophyllum lusitanicum*. We do not know the limits of this province along the coast between Tetuan and the Algerian frontier; but it does not seem to extend more than 30 or 40 miles southward from Tangier and Cape Spartel, and in point of fact nearly all the 96 species set down as common exclusively to Spain and Marocco have been found in the neighbourhood of Tangier and Tetuan, and are not seen in the central or southern provinces of Marocco.

The Algerian flora, so far as it offers special characteristics to distinguish it from the general Mediterranean type, owes its individuality mainly to species endemic in the mountain region of the Lesser Atlas, or on the high plateaux that present such a peculiar feature in the geography of Southern Algeria.

It is highly probable that most of these extend into Eastern and Central Marocco; but in the limited region known to us these characteristic species of the Algerian flora are for the most part wanting, and even in the Great Atlas but a small number of them have yet been seen.

Although several of the species characteristic of the Desert flora extend beyond their original boundary, and a few of them are found even in the south-east of Spain, there are few better-marked botanical provinces than that of the desert regions of Western Asia and Northern Africa. Considering the wide portion of the earth's surface occupied by the hot stony or sandy plains that extend with unimportant interruptions nearly from the banks of the Lower Indus to the Atlantic coast of Southern Marocco, the general uniformity of its scanty vegetable population is a fact very remarkable in botanical geography. Unfortunately our knowledge of the true desert-region of Southern Marocco, namely that which extends along the Southern side of the Great Atlas chain, is extremely limited; but when the collections recently received by M. Cosson from his collector are fully enumerated, it will be seen that many species of this peculiar type extend to within a few leagues of the Atlantic coast. But even in the low country, on the northern side of the Great Atlas, traversed by us there are some considerable tracts closely approximating in their physical conditions to the northern skirts of the Sahara. Many of the characteristic desert-species there reappear, although they are separated by lofty mountain-ranges from what may be considered their natural home.

The least-important element that goes to make up the Marocco flora, if we measure it by the number of representative species, but in some respects one of the most interesting, is that revealed by the presence of a small number of species common to the Maroccan and the Macaronesian* floras. Of these all but one are

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* I have ventured to use the name Macaronesia in a rather wider sense than some preceding writers, including under it Madeira with its dependent islets,

Canary-Island species, the remaining one being common only to Madeira and Western Marocco. It is true that the short list of fifteen species might be somewhat extended if we added certain species peculiar to Marocco but closely allied to Canary-Island endemic species. Such a list would include three cactoid Euphorbias, a *Sonchus* (*S. acidus*, nearly allied to *S. pinnatus*), a Senecio of the *Kleinia* group, and *Monanthes atlantica*, nearly allied to its Canary-Island congeners.

It must be remarked, however, that the types to which these last-mentioned species belong are rather generally West-African than specially Macaronesian, as all are common to the Cape de Verde Islands, if not to a wider region. Of the fifteen Macaronesian species found in the coast region of South Marocco, I think it is safe to say that the facts rather tend to show the accidental diffusion of a few Macaronesian species on the adjacent coast of Africa than to indicate the existence of a direct connexion between the continent and those islands within a geological period at all recent.

There remains to be considered the flora of the Great Atlas, the only one of the constituent portions of the general Marocco flora that seems to be confined within the boundaries of the empire. I am tempted to enter into some detail in discussing this part of my subject; but when I recollect what a large mass of additional unpublished matter is already in the possession of my friend M. Cosson, I feel that it would be unsatisfactory to attempt any such detailed discussion at the present time; and I hope to be able to resume the subject to greater advantage on a future occasion.

In the mean time it is allowable to point out some characteristic features of the Great-Atlas flora, as far as this is known to me from our collections. Dividing the mountain region into two zones, an upper and a lower one, and fixing the limit between them at about 1500 metres above the sea-level, I find in each of these a considerable number of endemic species, amounting in regard to the upper zone to about one fourth of the whole number of species. But there is little indication of that multiplication of specific forms that is so characteristic of the mountain-floras of

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along with the Canary-Island archipelago. Though the flora of Madeira be more limited than that of the Canaries, it is impossible to regard it as other than a detached member of that group.

Southern Spain, Greece, and Asia Minor. On the arenaceous and porphyritic rocks of the Aït Mesan valley we found to a great extent the same endemic species afterwards gathered on the schistose and calcareous rocks of Djebel Tezah, at least 30 miles distant.

Another fact worth noticing is, that, among a considerable number of new specific forms, no new generic type has yet been found in the Great Atlas.

But in my opinion the most singular point about the Great-Atlas flora is the presence of a large number of the common species of Central Europe, both annual and perennial, coupled with the fact that many of these are not species that have proved their power of adapting themselves to different climatal conditions, and that many of them have no nearer habitat than the mountains of Central or Southern Spain, while others must be sought at a still greater distance.

The conclusion to which I am led by a consideration of the facts is the same that I have derived from rather long observation of the mountain-vegetation of Central and Southern Europe—namely, that it is impossible to explain the facts without admitting that a large portion of our present flora is relatively very ancient, and that the species had assumed their present characters at least as early as the Miocene epoch.

I ought not to omit mentioning that two years after our visit two German naturalists, MM. Rein and Fritsch, were able to make a short expedition in the Great Atlas, nearly following our footsteps. They were not exclusively engaged in collecting plants; but they have deposited at Kew specimens of most, if not all, the plants found by them. Having been able to examine these, I have enumerated their specimens in the following catalogue.

In determining the specimens of our collections I have been materially assisted, in regard to the Orchideæ, by my friend Prof. H. G. Reichenbach. The friendly aid and assistance of Professor Oliver and Mr. J. G. Baker have been frequently invoked by me; and to the latter I am especially indebted for his thorough knowledge of the Liliaceæ and Amaryllideæ of the Mediterranean region, which he kindly contributed for my benefit. To Mr. Bentham, it is needless to say that in any case of doubt or difficulty I never applied in vain. The resources of his unequalled knowledge are always at the service of the younger and less-gifted workers in the field of science; and I cannot better close than by expressing the sense of affectionate regard with which I acknowledge his guidance.

ENUMERATIO GENERUM AC SPECIERUM.

PRÆMONENDA.

Ordines naturales plantarum secundum normam Candolleanam a celebb. Bentham et Hooker reformatam enumeravi; generum definitiones a Bentham et Hooker in opere classico 'Genera Plantarum' stabilitas quatenus profuerunt fere semper secutus sum.

Nomina trivialia specierum antiquiora, nisi plane erronea, semper prætuli. Auctorem speciei, qui primus eam ab affinibus distinxit et publici juris fecit, esse duxi, et prius citavi. Auctores cæteros parce citavi, opus tamen cyclopædicum Candolleanum 'Prodromus Systematis Universalis,' necnon Kunthianum 'Enumeratio Plantarum,' semper adduxi.

Formas istas plantarum a speciebus affinibus notis evidentibus et satis stabilibus dignoscendas cujus tamen differentiæ tales sint ut una pro alterius prole habenda esse videatur, sicut subspecies enumeravi, et typis diversis eorum nomina a cæteris distinxi.

Territorium Imperii Maroccani in regiones quinque limitibus certis nondum definitas distinxi: scilicet 1. Marocco septentrionalis—ditionem Tingitanam et Tetuanensem necnom regionem litoralem inter hanc et fines Algerienses amplectens; 2. Marocco occidentalis—vel regio litoralis et sublitoralis Atlantica, ab urbi El Araisch usque Agadir; 3. Marocco centralis, botanicis fere ignotus, inter zonam sublitoralem et convallem fluminis Moulouya; 4. Marocco orientalis, regio vix nota inter flumen Moulouya et fines Algerienses; 5. Marocco meridionalis, quo comprehenditur catena centralis Atlantis Majoris et regio inferior a montium radicibus usque flumen Oum er bia. His addenda erit regio vasta desertorum, Sahara Maroccana dicta, ab Atlante Majore meridiem versus se protendens, quæ tamen species nullas operi nostro subministravit.

Locorum natalium plantarum quibus adest signum (!) testis ipse sum. Idem signum, dum sequitur nomina abbreviata, plantas indicat quarum specimina vidi et scrutavi. Horum sequitur brevis elenchus :

Webb. Herb.—Philippus Barker Webb. Stirpes circa Tingidem et Tetuan anno 1827 lectæ, in Herbario Florentino as, servatæ.

Salzm. Exsicc.—Salzmann. Plantæ in ditione Tingitana anno 1825 lectæ quarum series venales duæ in Herbario Kewensi asservantur.

Lowe.—R. T. Lowe. Plantæ in agro Mogadorensi anno 1859 lectæ, quarum catalogum in Actis Soc. Linnæanæ Londinensis edidit. Harum exemplaria fere omnium in Herbario Kewensi exstant.

Schsb. spec.—Plantæ olim a Schousboe lectæ, ex ejus herbario duplicatæ, a cel. Cosson benevole communicatæ.

Balansa spec.—Plantæ a cl. Balansa anno 1867 lectæ, quarum perpaucæ venales in Herbario Kewensi vel in cæteris herbariis inveniuntur.

J. D. H.—Plantæ quas in itinere Maroccano amicissimus Eques Josephus Dalton Hooker solus legit.

Coll. Indig.—Plantæ mense Majo 1871 a duobus indigenis in ditione Agadir lectæ, quarum exemplaria in herbario meo ac in Kewensi extant.

R. et Fr.—Plantæ a cll. Rein et Fritsch anno 1873 lectæ, quarum specimina in Herbario Kewensi conservantur.

RANUNCULACEÆ (*Juss. Gen.* 231).

CLEMATIS (*L. Gen.* 696).

C. FLAMMULA (*L., DC. Pr.* i. 2).
Mar. sept.—Tanger. (*Salzm. sp. in herb. nost.*)! Tetuan (1851)!
Mar. merid.—Ourika! Amsmiz!
Ar. Geog. Regio Mediterranea exclusa Macaronesia.

C. CIRRHOSA (*L., DC. Pr.* i. 9).
Mar. sept.—Tanger (*Salzm. Exsicc.*)! (*Blackmore*)!
Mar. occid.—Mogador (*Lowe*)!
Mar. merid.—Visa pr. Ourika!
Ar. Geog. Regio Mediterranea calidior (exclusa Macaronesia).

C. Balearica (*Rich, Journ. Phys.* 1779, 127; *DC. Prod.* i. 9), = C. polymorpha (*Viv. Fl. Cors.* p. 9), inclusa forma foliis minus profunde divisis *C. semitriloba* (*Lag. Cat. Matr.* 17).
Mar. occid.—Agadir (*Coll. Indig.* 1871)!
Ar. Geog. Insul. Mediterraneæ (Baleares, Corsica, Sicilia). Marocco occidentalis.
A plerisque botanicis cum præcedente conjuncta, sed formæ intermediæ vix inveniendæ. Confer Boissier in Fl. Or. i. 2. Mihi videtur melius ad subspeciem reducenda. Specimina ex monte supra Agadir a cel. Cosson benevole communicata ad var. seu lusum *C. semitrilobam* pertinent.

THALICTRUM (*L. Gen.* 697).

T. GLAUCUM (*Desf. Cat. H. Par.* ed. 2, p. 126; *DC. Pr.* i. 15).
Mar. merid.—Mesfioua!
Ar. Geog. Penins. Iberica. Africa boreali-occidentalis. In Italia erronee indicatum.

ANEMONE (*L. Gen.* 694.).

A. PALMATA (*L., DC. Pr.* i. 19).
Mar. sept.—Tanger, in monte Djebel Kebir! Tetuan, in monte Beni Hosmar, usque 400 m.!
Ar. Geog. Penins. Iberica. Africa boreali-occidentalis.

ADONIS (*L. Gen.* 698).

A. AUTUMNALIS (*L., DC. Pr.* i. 23).
Mar. sept.—Tanger! (*Salzm. Exsicc.*)!
Mar. merid.—Prov. Haha!
Ar. Geog. Europa media. Regio Mediterranea omnis (exclusa Macaronesia).
Specimina nostra carpellorum juniorum rostro uncinato referunt *A.*

bœticam (Coss. Not. Crit. Plant. d'Esp. ii. 25), quæ mihi videtur var. *A. autumnalis.*

ADONIS ÆSTIVALIS (*L., DC. Pr.* i. 24).
Mar. merid.—Shedma! Amsmiz! Sektana!
Ar. Geog. Europa media (vix indigena?). Regio Mediterranea (Europa, Oriens, Africa borealis). Mont. Himalaya.
Variat in reg. nostra petalis sanguineis vel citrinis.

A. MICROCARPA (*DC. Syst.* i. 223, *DC. Pr.* i. 24), = A. Cupamana, *Guss. Syn. Fl. Sic.* ii. 36), = A. intermedia (*Webb, Phyt. Can.* i. 12).
Mar. merid.—Sektana!
Ar. Geog. Penins. Iberica; Sicilia. Afr. borealis. Macaronesia.
Petala in. spec. nostris citrina.

—— ——, var. A. DENTATA = A. dentata (*Del. Fl. Eg. Ill.* 17; *DC. Pr.* i. 24).
Mar. merid.—Sheshaoua!
Ar. Geog. Syria; Arabia; Persia. Africa borealis in reg. Saharensi.
In hoc genere species plurimæ extricatu difficillimæ et forsan non satis constantes.

RANUNCULUS (*L. Gen.* 699).

R. AQUATILIS (*L., DC. Pr.* i. 26).
Mar. sept.—Tanger! Inter Tetuan et Ceuta!
Mar. merid.—Amsmiz!
Ar. Geog. In reg. temperata et frigida hemisph. borealis (Europa, Asia, Africa, Macaronesia, et America). Rarius occurrit in Asia subtropica.

R. Baudotii (*Godr. Monog.* p. 14, fig. 4), = Batrachium marinum (*Fr. Nov. Fl. Suec. Mant.* iii. 51).
Inter specimina nostra Tingitana video examplaria quæ verisimiliter huc spectant. Habuerim pro varietate speciei polymorphæ (*R. aquatilis*) sed auctoritate tantorum virorum devinctus hanc in numerum subspecierum enumerare malui.
Ar. Geog. Gallia; Insul. Britannicæ. Batavia. Ditio Tingitana.

R. FICARIA (*L., B. et H. Gen. Pl.* i. 6.), = Ficaria ranunculoides (*Mnch. Meth.* 215; *DC. Pr.* i. 44).
Mar. sept.—Inter Tanger et Tetuan! In monte Beni Hosmar prope Tetuan!
Ar. Geog. Europa borealis et media et Mediterranea. Marocco septentrionalis.

—— ——, var. INTERMEDIUS, *nob.*
Mar. sept.—In monte Djebel Kebir prope Tanger!

R. calthæfolius (Jordan, Obs. vi. 2), = Ficaria calthæfolia (*Reich. Fl. Exc.* ii. 718), a planta Linnæana statura et floribus duplo majoribus facile dignoscendus, foliis profunde cordatis, lobis incumbentibus adeo ut primo intuitu peltata videntur, nobis non obvia fuit in itinere Maroccano. Varietas supra memorata gaudet floribus aliquid majoribus, foliis paullo profundius cordatis, sed typo Linnæano multo propior est quam *R. calthæfolio*, Jord.

Quoad sciam *R. Ficaria*, L., hucusque extra territorium Europæ non citatur.

RANUNCULUS BULLATUS (*L., DC. Pr.* i. 27).

Mar. sept.—Tanger! folia tantum visa.

Mar. occid.—Mogador (*Brouss. sec. Boissier*).

Ar. Geog. Regio Mediterranea australior e Creta usque in Lusitaniam.

R. CHÆROPHYLLOS (*L., DC. Pr.* i. 27), var. γ FLABELLATUS, *DC. l. cit.* = R. flabellatus (*Desf. Fl. Atl.* i. 438, tab. 114).

Mar. sept.—Valde frequens in regione collina circa Tanger! et Tetuan! et in monte Beni Hosmar, usque 800 m.! Variat caule simplici vel ramoso (usque 12-floro), foliis radicalibus integris ternatis vel biternatis.

Ar. Geog. Species per regionem Mediterraneam (exclusa Macaronesia) et montes Himalaya diffusa.

R. leucothrix (*Ball, Journ. Bot.* 1873, 296).

Inter priorem et *R. oxyspermum* (Steph. in Willd. Sp. Pl. ii. 1328, DC. Pr. i. 28) collocandus; *R. chærophyllo* propior et sicut subspecies enumerandus. Differt imprimis grumis cylindricis, nec ovatis, indumento ex pilis longis villosis inferne patulis superne adpressis, nec brevi adpresso sericeo, pedicellis fructiferis rigidioribus subincrassatis, foliorum tripartitorum segmento medio longiore sæpe tripartito calyce fructifero persistente reflexo.

Mar. merid.—In regione inferiore Atlantis (Distr. Rerava) circ. 1000 m.!

Petala subemarcida quam in typo minora; carpella immatura fere omnia abortiva.

A *R. chærophyllo* facie valde diversus, et forsan pro specie omnino distincta habuerim, si specimina meliora adfuissent. Calyx sub anthesi reflexus est in hoc genere nota specifica gravis momenti.

R. SPICATUS (*Desf. Fl. Atl.* i. 438, tab. 115; *DC. Pr.* i. 29).

Mar. sept.—In monte Beni Hosmar prope Tetuan circ. 900 m.!

Ar. Geog. Africa borealis. Lusitania?

In speciminibus nostris spica fructifera quam in spec. Algeriensibus paullo brevior.

———, var. R. BLEPHARICARPOS, = R. blepharicarpos (*Boiss. El.* 5).

Mar. merid.—In regione subalpina Atlantis Majoris, Djebel Tezah circ. 2600 m.!

Ar. Geog. Peninsula Iberica. Marocco meridionalis. Speciminibus Nevadensibus a nobis lectis omnino conformis.

R. GRAMINEUS (*L., DC. Pr.* i. 32).

Mar. sept.—In monte Beni Hosmar prope Tetuan circ. 1000 m.!

Ar. Geog. Europa occidentalis et australis, nullibi frequens. Marocco septentrionalis. Extra Europam non prius detectus ?

RANUNCULUS ATLANTICUS (*Ball, Journ. Bot.* 1873, p. 296).

Subspecies *R. acris* (*L., DC. Pr.* i. 36) sed formæ intermediæ nondum observatæ ?

Inter subspecies et varietates *R. acris* distinguitur imprimis statura maxima 3-5-pedali, corolla (pro grege) maxima, rhizomate crasso horizontali fibras validas emittente, foliis magnis pentagonis profunde 3- vel 5fidis, segmentis incisis, indumento sericeo-piloso adpresso, præsertim in foliorum pagina inferiore (folia igitur bicoloria). Carpella parva numerosa rostrata, rostro subrecto longiusculo.

Mar. merid.—Frequens in convallibus septentrionalibus Atlantis Majoris —Urika ! Reraya ! Ait Mesan ! Amsmiz ! a 1000 m. ad 1900 m.

Huic proximus est *R. Friesianus,* Jord. Obs. vi. p. 17, = *R. nemorivagus,* Jord. Diagn. i. p. 74.

In regione Mediterranea *R. acris* est fere semper planta montana, et vix in zonam olivetorum se protendit. *R. atlanticus* noster non fugit loca calidiora.

R. PALUSTRIS (*L., DC. Pr.* i. 41), var. MACROPHYLLUS, = R. macrophyllus (*Desf. Fl. Atl.* i. 437), = R. villosus (*Salzm. Exsicc. non DC.*).

Mar. sept.—Tanger ! (*Salzm. Exsicc.*) ! Prope Cap. Spartel ! Tetuan 1851 ! In monte Beni Hosmar !

Ar. Geog. Africa borealis. Formæ seu varietates arcte affines proveniunt in Lusitania (Brot. Fl. Lus. sub *R. adscendente*), in Hispania (*Boiss. Voy.*), in Sardinia (*Moris. Fl. Sard.*), in Corsica (*DC.* fl. fr. sub *R. corsico*) et in Oriente (*Boiss. Fl. Or.*).

Planta Fontanesiana differt ab orientali foliis minus profunde divisis, pedunculis fructiferis crassioribus. Ab his paululum differt planta Europæ australis foliorum lobo medio longiore, rostro apice subrecurvato.

R. procerus (*Moris, Fl. Sard.* i. 45 ; *Icon.* tab. 2) ?

Mar. sept.—Tanger (*Webb Herb.*) !

Ar. Geog. Sardinia. Ager Tingitanus.

A *R. palustri*, cui simillimus, differt carpellis etiam junioribus tuberculoso-setigeris. De differentia specifica dubitavit ipse beatus Moris ; nobis videtur ad subspeciem reducendus.

R. BULBOSUS (*L., DC. Prod.* i. 41), var. NEAPOLITANUS, = R. Neapolitanus (*Ten. Syll.* p. 272).

Mar. merid.—In regione media Atlantis Majoris ; in convalle Amsmiz circ. 1500 m. ! in monte Djebel Tezah usque 2000 m. !

Ar. Geog. Italia ; Sicilia ? ; Corsica ; Hispania (*Bourg. Pl. d'Esp.* no. 2249). Oriens (*Boiss. Fl. Or.*). Marocco meridionalis.

A typo facile dignoscitur rhizomate parum incrassato fibras plurimas crassas edente, sed pace cel. Boissier carpella habet *R. bulbosi,* rostris brevissimis plus minusve arcuatis.

Confer notulam MS. beati J. Gay, et frustulum ex exemplari authentice Tenoreano herb. Desfontaines, in Herb. Kew conservata. Meo sensu *R. neapolitanus* est omnino forma meridionalis *R. bulbosi* et verisimiliter per totam regionem Mediterraneam diffusus.

—— ——, var.? GIGANTEUS, *nob.* 5-pedalis et ultra; rhizoma incrassatum; foliorum radicalium petioli 2-pedales; folia pinnatipartita, segmenta trisecta, varie incisa; flores *R. bulbosi.* Carpella desunt.

Mar. merid.—In regione inferiore Atlantis secus torrentem Ourika!

R. rhœadifolius (DC. Syst. i. 284) ex descript. celeb. auctoris nostræ plantæ haud absimilis, sed ex icone in Delessert Icon. i. 40, hic mihi videtur forma *R. philonotidis,* Retz, seu *R. trilobi,* Desf.; sed ob defectum carpellorum res incerta manet. Planta nostra est fere certe *R. bulbosi* forma insignis.

RANUNCULUS PHILONOTIS (*Retz, Obs.* vi. 3; *DC. Pr.* i. 41), var. INTERMEDIUS, *nob.* = R. intermedius (*Poir. Dict.* vi. 116)?

Mar. sept.—Tanger!

Ar. Geog. Hinc inde in regione Mediterranea?

R. trilobus (*Desf. Fl. Atl.* i. 437, tab. 113; *DC. Pr.* i. 42).

Mar. sept.—Tanger (*Salzm. Exsicc.*)! (*Webb. herb.*)! Tetuan secus ripas fluminis (1851)!

Mar. merid.—Sektana!

Ar. Geog. Regio omnis Mediterranea (inclusa Macaronesia).

Pace auctorum celebb. qui *R. trilobum* pro specie probe distincta enumerarunt hic mihi mera forma *R. philonotis* videtur, et nisi obstitisset auctoritas majorum pro varietate potius quam pro subspecie habuerim. Notæ diagnosticæ ex carpellis desumptæ non gravis momenti videntur. In *R. philonoti* vulgari carpella ostendunt tubercula circa marginem concentrice disposita, sed hæc non raro omnino desunt. In *R. trilobo* tubercula crebriora sunt sed secundum eandem normam distribuuntur. Varietas nostra supra memorata, quæ verisimiliter est *R. intermedius,* Poir., habitu et corolla est *R. philonotis,* sed glabritie et carpellis propius accedit *R. trilobo.*

R. ARVENSIS (*L., DC. Pr.* i. 41).

Mar. merid.—In regione inferiore et media Atlantis Majoris; in convalle Aït Mesan circ. 1200 m.! et usque 2200 m!

Ar. Geog. Europa media, Asia borealis (*Gmel.*). Regio Mediterranea omnis. Montes Himalaya.

R. MURICATUS (*L., DC. Pr.* i. 42).

Mar. sept.—Tanger! (*Salzm. Exsicc.*)! (*Webb. herb.*)! Prope Cap. Spartel!

Mar. merid.—In regione inferiore et media Atlantis Majoris. Reraya circ. 1100 m.! Amsmiz! Djebel Tezah usque 1750 m.!

Ar. Geog. Regio Mediterranea omnis. India boreali-occidentalis. America borealis et Meridionalis (vix indigenus?).

RANUNCULUS PARVIFLORUS (*L.*, *DC. Pr.* i. 42).

Mar. sept.—Tanger (*Salzm. Exsicc.*)! Vidimus in sepibus haud procul a Tanger! et in dumosis montis Djebel Kebir!

Mar. merid.—In reg. inferiora Atlantis Majoris. distr. Reraya! Ex prov. Mtouga specimina nana attulerunt R. et Fr.

Ar. Geog. Europa occidentalis ex Hibernia ad fretum Herculis. Europa australis, ager Byzantinus. Africa boreali-occidentalis. Macaronesia. America borealis.

R. OPHIOGLOSSIFOLIUS (*Vill. Dauph.* iv. 732, tab. 49; *DC. Pr.* i. 43).

N.B. In exemplari nostro operis Villarsii anno 1789 impressi inventum III. 731.

Mar. sept.—In uliginosis pr. Tanger! (*Salzm. Exsicc.*)

Ar. Geog. Europa occidentalis ex Sarnia ad Lusitaniam. Regio omnis Mediterranea. Formæ affines in America boreali (*R. pusillus,* Poir.), et in America meridionali (*R. bonariensis,* Poir.).

In regione subalpina Atlantis Majoris (in convalle Aït Mesan circ. 2550 m. loco frigido uliginoso) invenimus *Ranunculum* nondum florentem, rhizomate brevi recto, fibris validis elongatis (6–10-pollicaribus) præditum. Folia radicalia sunt glabra, pinnatim trisecta, lobis cuneato-ovatis, in pagina superiore albo variegata. Eandem plantam florentem ex reg. superiore Atlantis anno 1873 attulerunt cll. Rein et Fritsch. In hac scapus solitarius superne adpresso-pilosus, folium unicum subsimplex gerens, petala lutea mediæ magnit., carpella (nimis immatura) rostrata, rostro spiraliter recurvo.

Est verisimiliter nova species e grege *R. montani,* W., et proxima *R. procumbenti* (Boiss., Ann. Sc. Nat., et Fl. Or. i. 51).

NIGELLA (*L. Gen.* 685).

N. ARVENSIS (*L.*, *DC. Pr.* i. 49).

Mar. merid.—Aïn Tarsil, prov. Mtouga!

Ar. Geog. Europa media. Regio Mediterranea (exclusa Macaronesia).

—— ——, var. COSSONIANA, *nob.* = N. hispanica, var. parviflora (*Coss. Pl. Crit.* 49).

Mar. occid.—Prope Mogador! et Agadir (*Coll. Indig.* 1871)!

Mar. merid.—Prov. Shedma pluribus locis! Prov. Mtouga (*R. et Fr. spec.*)!

Ar. Geog. Gallia australis. Hispania. Africa borealis.

Cel. Boiss. (in Fl. Or. i. 66) sub *N. arvensi* plurimas sic dict. species adunavit et sicut varietates descripsit; scil. *N. tuberculata,* Gris. Spic., *N. aspera,* C. Koch., *N. fœniculacea,* DC., *N. divaricata,* Beaupré in DC. Syst., *N. cretensis,* Stev., *N. aristata,* Sibth. et Sm., sed revera vix pro varietatibus habendæ sunt. *N. arvensis,* L., est enim species summopere ludibunda, per totam regionem Mediterraneam (exclusa Macaronesia) late diffusa, et rarius invenies specimen typo unius alteriusve formæ descriptæ omnino conveniens.

Cel. Cosson loc. cit. plantam nostram a *N. arvensi* distinxit et pro varietate *N. Hispanicæ* suæ vindicavit. Sed vir oculatissimus limites frustra quæsivit, dum natura invicta obstat. Forma et color sepalorum, ratio inter se labiorum petali, carpella extus plus minusve glanduloso-rugosa, horum rostra erecta, vel patentia, vel recurva, sunt omnes notæ variabiles, sicut jam me docuerunt specimina plurima Maroccana in vivo observata. Nec valet nota diagnostica a cll. Gr. et God. (Fl. Fr. i. 45, 46) proposita. In *N. arvensi* nervi laterales carpelli basin usque rarius producti; dum in *N. Hispanica* rostrum semper trinerve est, nervi in dorso carpelli haud raro producti.

N. Hispanica a, Cosson, *l.c.*, in Hispania Gaditana haud infrequens (Bourgeau, Pl. d'Esp. 1849, No. 13, et a me olim prope Vejer et pr. Zahara lecta), statura maxima, sepalis illis *N. arvensis* 2–3ve majoribus, basi vix attenuatis, pro subspecie habenda videtur. Hæc in ditione Maroccana nondum detecta fuit. Specimina nostra ex Agadir et prope Mogador lecta gaudent floribus quam in *N. arvensi* typica paullo majoribus. Hæc forma prope Mogador a Balansa lecta sistit verisimiliter *N. Hispanicam,* var. *intermediam* (Coss., Index in Bull. Soc. Bot. Fr.).

NIGELLA DAMASCENA (*L., DC. Pr.* i. 49), forma spontanea floribus minoribus = *N. Bourgæi,* Jord. pug.

Mar. sept.—Tetuan (*Webb. herb.*)!

Mar. occid.—Agadir (*Coll. Indig.* 1871)!

Mar. merid. In prov. Shedma! et Haha (*J. D. H.*)!

Ar. Geog. Regio Mediterranea occidentalis. Europa. Afr. borealis. Macaronesia. In Oriente vix indigena?

AQUILEGIA (*L. Gen.* 684).

A. VULGARIS (*L., DC. Pr.* i. 50) var.?

Mar. merid.—In monte Djebel Tezah circ. 1800 m. legit *J. D. H.*

Ar. Geog. Europa borealis (excl. arctica), et media, et australis (in umbrosis montanis). Macaronesia. In Asia temperata et in mont. Himalaya. Formæ affines in America boreali.

Stirps polymorpha et miro modo ludibunda. Specimina nostra gaudent foliis radicalibus triternatis, foliolis profunde incisis, omnibus glabrescentibus, petiolis longis, caule bipedali superne ramoso, floribus minoribus viridi-flavescentibus. Tota planta (foliis exceptis) pube brevi non viscosa prædita. Carpella desunt. Experientia docebit an varietas sit, vel subspecies nomine novo salutanda.

DELPHINIUM (*L. Gen.* 681).

D. AJACIS (*L., DC. Pr.* i. 51).

Mar. merid.—Mesfioua!

Ar. Geog. Europa meridionalis, Macaronesia (an indigenum ?).

Legi specimen unicum valde incompletum, et ideo minus certum.

D. HALTERATUM (*Sibth. et Sm. Fl. Gr.* vi. tab. 107; *Boiss. Fl. Or.* i. 86, et forsan *DC. Pr.* i. 53).

Mar. sept.—Tanger (*Salzm. Exs.* sub *D. junceo*)! (*Webb. herb.*)!

Mar. occid.—Agadir (*Coll. Indig.* 1871)!

Mar. merid.—Sat frequens in regione inferiore. Prov. Haha! Shedma! Mtouga!

Ar. Geog. Regio Mediterranea. Europa. Africa borealis. Formæ affines in Oriente.

—— ——, var. CARDIOPETALUM, = D. cardiopetalum (*DC. Syst.* i. 347).

Mar. sept.—Tanger! Tetuan (anno 1851)! Forma elata, racemo laxo, foliis rigidis.

Mar. occid.—In monte Djebel Hadid! prope Aïn el Hadjar!

Ar. Geog. Gallia; Hispania. Africa borealis.

—— ——, var. MACROPETALUM, = D. macropetalum (*DC. Syst.* i. 350).

Mar. occid.—Frequens in arenosis prope Mogador! ubi legerunt etiam Broussonet, Schousboe, Lowe, et Balansa.

Ar. Geog. Hucusque nonnisi pr. Mogador detectum.

Primo aspectu a *D. halterato* et formis affinibus differt floribus duplo majoribus, pedunculis longioribus, foliorum segmentis latioribus. Caracteres stabiles frustra quæsivi dum hæ notæ omnes variabiles sunt. Vix aut ne vix quidem a *D. obcordato*, DC. Syst. Nat. i. 350, ex specimine manco in 'Barbaria' lecto a cl. Durand descripto, diversum est.

Nihil dubito quin *Delphinia* omnia § *Delphinellum*, DC., regionis Mediterraneæ (exclusis orientalibus et *D. Balansæ*) cum *D. peregrino*, L., nexu genetico colligari, et pro subspeciebus vel varietatibus enumeranda esse. *D. halteratum* dignoscitur petalorum lateralium lamina orbiculari basi rotundata vel leviter obcordata. *D. junceum* (DC. Fl. Fr. v. 364, et Prod. i. 52) habet laminam ellipticam in unguem attenuatam. Foliorum forma, indumentum, ratio longitudinis calcaris et sepalorum notæ sunt omnino variabiles. Formæ arcte affines in tota regione Mediterranea (exclusa Macaronesia) vulgares sunt.

DELPHINIUM, sp. nov.? Forsan subspecies *D. Balansæ* (Boiss. et Reut. Diagn. Pl. Or., ser. 2, v. 12)?

Mar. merid.—In regione subalpina Atlantis Majoris. In convalle Aït Mesan supra Arround ad 2400 m.! In monte Djebel Tezah 2300–2500 m.!

Stirpem nondum florentem incertæ sedis inter *Delphinia* (suadente cl.

Baker) retuli; accuratius visa affinis *D. Balansæ* mihi videtur, sed pluribus notis differt. Radix perennis lignosa, plerumque obliqua; caules florigeri e basi procumbente adscendentes; folia radicalia et inferiora palmatim (nec pinnatim) partita, caulina magis divisa subbiternata; indumentum *D. Balansæ.*

DELPHINIUM PENTAGYNUM (*Lam. Dict.* ii. 264; *DC. Pr.* i. 54).

Mar. occid.—In monte Djebel Hadid haud procul a Mogador. *R. et Fr. spec. in Herb. Kew.*!

Ar. Geog. Peninsula Iberica. Africa borealis. Sicilia = *D. emarginatum* (Presl, Bert. Fl. It. v. 419).

Pace beati Bertoloni planta Algeriensis (Desf. Fl. Atl. i. 427, tab. 111) est certe non diversa a stirpe Calpensi quæ Maroccanis conformis. Specimina lusitanica non vidi, sed *Lam. l. c.* plantam lusitanicam sub oculis habuit, et eandem speciem descripsit (confer *Brotero, Fl. Lus.* ii. 304) quam pro *D. emarginato,* Psl. habuit auctor Fl. Italicæ. Notæ diagnosticæ mihi videntur incertæ et variabiles.

BERBERIDEÆ (*Vent. Tabl.* iii. 83).

BERBERIS (*L., Gen.* 442).

B. CRETICA (*L., DC. Pr.* i. 106), var. = B. Hispanica (*B. et R. Pug.* 3)?

Mar. merid.—In regione subalpina Atlantis Majoris. In monte Djebel Tezah (*J. D. H.*)!

Ar. Geog. Hispania. Africa boreali-occidentalis. Forma arcte affinis in Oriente et in insulis Italicis Corsica, Sardinia, Sicilia (*B. Ætnensis,* Presl).

Specimina nostra inter *B. creticam* et *B. cratæginam,* DC., ambigua videntur sed propiora plantæ Nevadensi (olim *B. vulgaris,* L., var. *australis,* Boiss. = *B. Hispanica,* B. et R.). Folia subintegerrima in ramis fertilibus spinas subæquantia, in sterilibus (hornotinis?) duplo longiora. Baccæ nigro-cæruleæ stigmate breviter stipitato coronatæ. *B. cretica,* L., cum *B. cratægina,* DC., et *B. densiflora,* Boiss. et Buhse, melius sicut subspecies *B. vulgaris* enumerandæ videntur.

PAPAVERACEÆ (*Juss. Gen.* 235).

PAPAVER (*L. Gen.* 648).

P. HYBRIDUM (*L., DC. Pr.* i. 118).

Mar. occid.—Casa Blanca! Agadir (*Coll. Indig.* 1871)!

Mar. merid.—Tam in planitie, prov. Shedma! et prope Marocco! quam in reg. inferiore Atlantis. Aït Mesan!

Ar. Geog. Europa media. Regio Mediterranea omnis.

P. DUBIUM (*L., DC. Pr.* i. 118), var. *Maroccanum,* nob.

Mar. sept.—Tanger! Inter Tetuan et Ceuta!

Mar. occid.—Casa Blanca!

Differt a typo foliis radicalibus pinnatis, caulinis integris basi latis subamplexicaulibus inæqualiter incisis vel crenato-incisis, interdum subtrilobis, pilosis vel subglaberrimis. Quoad foliorum formam videtur a *P. dubio* prorsus diversum et potius ad *P. gracile* (Boiss. Fl. Or. i. 115) accedens, sed formæ intermediæ non desunt.

P. dubium est species per totam Europam late diffusa, nec deest in regione Mediterranea (inclusa Macaronesia). In India boreali-occidentali adest forma glabra (*P. dubium β. lævigatum,* Elk. Mon.) quæ forma, monente Boissier (Fl. Or. i. 114), ab ipso Elkan cæterisque auctoribus cum *P. lævigato,* M. B., perperam confusa est. Vereor ne caracteres a disci crenis incumbentibus vel inter se discretis a cel. Boissier allati, in hac grege fallaces sint. In stirpe nostra crenæ disci interdum incumbentes fere ut in *P. Rhœas.*

Papaver Rhœas (*L., DC. Pr.* 118).

Mar. sept.—Tanger!

Mar. occid.—Mogador (*Lowe*); Agadir (*Coll. Indig.* 1871)!

Mar. merid.—Hinc inde in planitie Maroccana—Shedma! Sheshaoua! Pr. urbem Marocco! Formam nanam parvifloram legi pr. Sektana!

Ar. Geog. Europa media. Regio Mediterranea omnis.

P. tenue (*Ball, Journ. Bot.* 1873, 296).

Annuum (seu bienne?); planta tota pilis longis setosis vestita (folia inferiora et sepala interdum glabrescentia); folia primaria pinnata, pinnis inciso-lobatis segmentis rotundatis, caulina circuitu late triangulari-ovata, bipinnatifida, segmentis lineari-oblongis acutis; caulis subsimplicis setæ inferiores patulæ, superiores adpressæ; petala obovato-oblonga; discus convexiusculus capsulæ glabræ obovato-turbinatæ latitudine vix æqualis, crenatus, crenis vix incumbentibus; stigmata 6–7.

Mar. merid.—In regione media et superiore Atlantis Majoris, in convalle Aït Mesan! et in jugo Tagherot! a 1800 m. ad 3000 m., in convalle Amsmiz! et in monte Djebel Tezah! a 1600 m. ad 2500 m.

Proximum *P. arenario,* M. B., at differt petalis angustis nec subrotundatis, setis caulinis adpressis nec patulis, cæterisque notis. Capsula fere *P. Decaisnei,* Hochst. et Steud., sed in hoc discus complanatus, crenæ magis discretæ.

P. somniferum (*L., DC. Pr.* i. 119), var. **setigerum**, =P. setigerum (*DC. Fl. Fr.* v. 585; *DC. Pr.* i. 119).

Mar. sept.—Tanger, versus Cap. Spartel (*Webb. herb.*)!

Mar. occid.—Mogador (*Lowe Cat.*).

Ar. Geog. In regione Mediterranea hinc inde, sed patria incerta.

P. somniferum colitur, et sæpe cum seminibus affertur in Imperio Maroccano, et ex cultis evadit forma sylvestris, *P. setigerum,* sed verisimiliter haud indigenum est.

Papaver rupifragum (*Boiss. et Reut. Pug.* p. 6), var. **atlanticum** (*Ball, Journ. Bot.* 1873, 296).

Perenne, cæspitosum; rhizoma multicaule; folia (fere omnia radicalia) setis longis albidis dense obtecta, circuitu obverse lanceolata, grosse dentata vel pinnatipartita, segmentis inæqualibus plus minusve incisis; caulis scapiformis, 8–20-pollicaris, simplex vel ima basi furcatus, adpresse setosus; flores ante anthesin nutantes; petala late obovata, sordide aurantiaca; capsula clavata, glabra, ima basi (ad petalorum insertionem) annulo glandulifero instructa; discus convexus, crenatus, capsulæ latitudinem superans.

Mar. merid.—In regione subalpina Atlantis Majoris; Aït Mesan! Djebel Tezah! a 2000 m. ad 2600 m.

Aspectu a planta Boissieriana diversissima; hæc enim obscure virens subglaberrima, dum varietas nostra canescens undique pilosissima, forsan melius pro subspecie habenda.

P. rupifragum est species distinctissima, hucusque tantum in Hispania Arundana detecta.

RŒMERIA (*Med. in Ust. Ann.* 1792, 15).

R. hybrida (*DC. Syst.* ii. 92, *et Prod.* i. 122, *L.* sub *Chelidonio*).

Mar. merid.—In regione inferiore Atlantis Majoris. Pr. Sektana circ. 1200 m.! In convalle Amsmiz, circ. 1500 m.!

Ar. Geog. Regio Mediterranea fere omnis (exclusa Macaronesia). In Europa media vix indigena.

Siliquæ in spec. nostris aliquid attenuatæ fere ut in *R. rhœadiflora*, Boiss.

GLAUCIUM (*Scop. Fl. Carn.* ed. 2, i. 369).

G. luteum (*Scop. l. c.*),=G. flavum (*Ctz. Fl. Aust.* i. 141; *DC. Pr.* i. 122),=G. fulvum (*Lois. Fl. Gall.* i. 376; *DC. Pr.* i. 122),=Chelidonium glaucium, *L.*

Mar. sept.—Legi nondum florens in arenosis maritimis inter Tetuan et Ceuta!

Ar. Geog. Europa borealis et media. Regio Mediterranea omnis (inclusa Macaronesia).

G. corniculatum (*L.*, sub *Chelidonio, Curt. Lond.* vi. tab. 32; *DC. Prod.* i. 122).

Mar. occid.—In prov. Haha prope Mogador! (*Schsb.*) et prope Agadir (*Coll. Indig.* 1871)!

Mar. merid.—Prov. Shedma! Mesfioua! Seksaoua!

Ar. Geog. Germania. Regio Mediterranea (exclusa Macaronesia).

HYPECOUM (*L. Gen.* 171).

H. pendulum (*L., DC. Pr.* i. 124).

Mar. merid.—In regione inferiore Atlantis Majoris. In convalle Amsmiz, circ. 1400 m.! Prope Mzouda, *J. D. H.*!

Ar. Geog. Europa media. Regio Mediterranea (exclusa Macaronesia).

CORYDALIS (*DC. Fl. Fr.* iv. 636; *Benth. et H. fil. Gen. Pl.* i. 55).

C. HETEROCARPA (*Durieu in Parl. Giorn. Bot.* i. 336, sub *Ceratocapno*), =Ceratocapnos umbrosa (*Dur. in Walp. Ann.* ii. 29).

Mar. occid.—Prope Mogador (*Lowe Cat.*).

·Mar. merid.—In regione inferiore Atlantis Majoris, in convalle Aït Mesan detexit G. Maw!

Ar. Geog. Africa borealis. Hucusque nonnisi in Algeria detecta.

De genere *Ceratocapno* confer B. & H. *l. c.* p. 56. A *Corydali claviculata*, cui simillima, differt fructu dimorpho. Superiores cujusvis racemi capsulæ 1–2-spermæ, bivalves, in rostrum longum cornuto-recurvum attenuatæ; inferiores nuces indehiscentes, monospermæ, compressæ, truncatæ, fenestrato-sulcatæ. Nomen specificum a clar. inventore prius editum, aptum et nullomodo mutandum.

FUMARIA (*L. Gen.* 849).

F. AFRICANA (*Lam. Dict.* ii. 569),=F. corymbosa (*Desf. Act. Soc. Hist. Nat. Par.* i. 26, tab. 6; *DC. Pr.* i. 130; *Ol. Ham. Mon.* 42).

Mar. sept.—In rupibus juxta Tetuan florentem et fructiferam legi mense Junio 1851 et iterum Aprili 1871!

Ar. Geog. Hispania Granatensis; Africa borealis. Species sat rara.

F. OFFICINALIS (*L., DC. Pr.* i. 130; *Ol. Ham. Mon.* 9).

Mar. merid.—In regione media Atlantis Majoris, in convalle Aït Mesan a 2000 m. ad 2200 m.!

Ar. Geog. Patria verisimiliter regio Mediterranea. Nunc fere cosmopolita per Europam, Asiam, Africam borealem (inclusa Macaronesia), Americam tam borealem quam meridionalem late diffusa.

F. VAILLANTII (*Lois. Not.* p. 102; *DC. Pr.* i. 130; *Ol. Ham. Mon.* 14).

Mar. merid.—In regione inferiore Atlantis majoris pr. Tasseremout!

Ar. Geog. Europa et Asia temperata; regio Mediterranea (inclusa Macaronesia); India orientalis (*sec. Ol. Hammar*).

Notæ quibus hæc et sp. sequens dignoscuntur ex fructu desumptæ vix stabiles sunt. Fructus *F. parvifloræ* in Marocco rarius apiculatus.

F. PARVIFLORA (*Lam. Dict.* ii. 567; *DC. Pr.* i. 130; *Ol. Ham. Mon.* 16).

Mar. occid.—Casa Blanca!

Mar. merid.—Sat frequens in planitie et in regione inferiore Atlantis Majoris. Prov. Shedma, pluribus locis! Prope urbem Marocco! In convalle Aït Mesan, *J. D. H.*! In convalle Amsmiz circ. 1500 m.!

Ar. Geog. Europa media (vix indigena?). Regio Mediterranea omnis, unde in Americam subtropicam (Mexico, *sec. Parlatore*, Buenos Ayres, *herb. Hooker*) et in Indiam boreali-occidentalem effugit.

In spec. Maroccanis flores sæpissime albi, rarius dilute rosei.

FUMARIA CAPREOLATA (*L., DC. Pr.* i. 130; *Ol. Ham. Mon.* 24), var. CONDENSATA, *nob.*

Mar. merid.—Ad radices Atlantis Majoris. Frequens circa Amsmiz! Mzouda! Keira!

Ar. Geog. F. capreolata per Europam fere totam et regionem Mediterraneam (inclusa Macaronesia) late diffusa est, et inde in Americam extratropicalem aufuga. De distributione formarum seu varietatum ardua sententia et forsan inutilis est.

Var. nostra est forma parviflora, racemis densis, et forsan cum var. γ, *albiflora*, Ol. Ham. l. c. conjungenda.

F. media (*Lois Not.* 102; *Ol. Ham. Mon.* 28, *non DC. Syst. nec Prod.*), var. α, *Ol. Ham. l. c.*,=F. Boræi (*Jord. Cat. Jard. Bot. Gren.* 1849),=F. Munbyi (*Bois. et Reut. Pug.* p. 5),=F. capreolata (*Eng. Bot.* tab. 943, et auct. Brit. fere omnium).

Mar. sept.—Circa Tanger! Prope Tetuan, anno 1851!

Ar. Geog. Europa occidentalis a Norvegia ad fretum Herculis. Africa boreali-occidentalis ab agro Tingitano ubi valde frequens usque Oran. Huc verisimiliter referenda est *F. capreolata* (Salzm. Exsicc.).

F. media est nobis subspecies cum *F. capreolata* pluribus formis intermediis conjuncta.

—— ——, var., cui proxima F. SEPIUM (*Boiss. Diagn. Pl. Or.* ser. 2, i. 16; *Ol. Ham. Mon.* 27).

Mar. merid.—In regione media Atlantis Majoris. In convalle Aït Mesan 1700–1800 m.!

Var. nostra inter formas intermedias enumeranda quibus adsocianda est *F. sepium*, Boiss. Habet sepala magna corollæ dimidium subæquantia, subintegra, basi leviter dentata, et bracteas pedicellis apice valde incrassatis æquilongas.

F. MACROSEPALA (*Bois. El.* p. 8; *Ol. Ham. Mon.* 36).

Mar. sept.—In monte Beni Hosmar legi specimen mancum mox floribundum! In eodem monte olim legit beatus P. B. Webb.

Ar. Geog. Hispania Granatensis et Gaditana. Montes Tetuanenses. Species rara, verisimiliter probe distincta.

F. AGRARIA (*Lag. El. Pl. Hort. Matrit.* 1816, p. 21; *Ol. Ham. Mon.* 38),=F. media (*DC. Syst.* ii. 134; *et Prod.* i. 130, *non Lois.*).

Mar. sept.—Tanger (*Salzm. Exsicc. sub* F. media)! Tetuan!

Mar. occid.—Casa Blanca! Mazagan! Mogador (*Lowe*). Agadir (forma fl. minoribus, *Coll. Indig.* 1871)!

Ar. Geog. Regio Mediterranea Europæ et Africæ borealis. Deest in Oriente et in Macaronesia. Ex Europa in Americam australem allata.

—— ——, var. ELATA, *nob.*, an *F. rupestris*, var. *laxa* (Boiss. et Reut. Pug. p. 4)?

Mar. sept.—In rupibus calcareis pr. Tetuan!

Mar. merid.—Prov. Haha! Shedma! Prope Marocco!

F. rupestris (B. et R. *l. c.*; Ol. Ham. Mon. 40), mihi videtur forma rupestris *F. agrariæ*, et var. *laxa* est ejusdem forma sylvestris scandens.

Var. nostra differt a typo sepalis longius acuminatis apice subherbaceis, fructu insigniter compresso et carinato.

—— ——, var. ATLANTICA, *nob.*

Mar. merid.—In regione media Atlantis Majoris. Aït Mesan circ. 1600 m.!

Planta haud omnino certa—facies *F. capreolatæ*, sed characteres potius *F. agrariæ*; a priore differt sepalis multo latioribus. Multis notis, et foliorum segmentis subflabellatis, ad *F. flabellatam* accedit, sed bracteæ duplo longiores, ut in *F. rupestri*, et pedicelli erecto-patuli nec reflexi.

F. flabellata (Gasp., Rendic. Ac. Sc. Nap. i. 51; Ol. Ham. Mon. 41) verisimiliter ut subspecies *F. agrariæ* enumeranda erit.

Fumaria tenuisecta (*Ball, Journ. Bot.* 1873, 297).

Affinis *F. agrariæ*, sed insigniter differt sepalis angustis minimis acutis dentatis diametrum fructus non attingentibus; a *F. judaica*, Boiss., petalis multo majoribus, et ab omnibus hujus gregis valde ludibundi foliis tripinnatisectis in lacinias lineares planas mucronatas dissectis.

Mar. merid.—In regione inferiore Atlantis majoris in convalle Aït Mesan ad 1400 m. specimen unicum legi!

Invito animo novam subspeciem proposui pro hac stirpe singulari. Folia fere *F. Kralikii*, Jord.

CRUCIFERÆ (*Juss. Gen.* 237).

MATTHIOLA (*R. Br. in H. Kew.* iv. 119).

M. TRISTIS (*R. Br. l. c.* p. 120; *DC. Pr.* i. 134).

Mar. occid.—Mogador (*Lowe*).

Ar. Geog. Europa mediterranea. Africa borealis. In Asia Minore rarior. Macaronesia (*sec. Lowe*).

M. TRICUSPIDATA (*R. Br. l. c.*; *DC. Pr.* i. 134).

Mar. sept.—In arenosis maritimis inter Tetuan et Ceuta!

Ar. Geog. Per oras maris Mediterraneæ late diffusa. In littoribus Atlanticis Europæ et Africæ hucusque non indicata.

M. PARVIFLORA (*R. Br. l. c.*; *DC. Pr.* i. 135).

Mar. merid.—Frequens in incultis saxosis calidioribus. Aïn Oumast! Misra ben Kara! Gurguri! Mtouga! Mskala! Prope urbem Marocco (*Schsb. spec.*)!

Ar. Geog. Hispania; Marocco; Macaronesia.

In Marocco fit sæpe robustior, sesquipedalis et ultra.

CHEIRANTHUS (*R. Br. in H. Kew.* iv. 118).

C. SEMPERFLORENS (*Schousb. Gew. in Marok.* p. 181; *DC. Pr.* i. 136).

Mar. occid.—Frequens in arenosis circa Mogador! ubi jam legerunt Broussonnet, Schousboe, Lowe et Balansa. Inde se protendit usque radices montes Djebel Hadid ad Aïn el Hadjar!

W.H. Fitch lith

NASTURTIUM ATLANTICUM. *Ball*

Fitch imp.

Ar. Geog. Species Maroccana e grege Macaronesiaco *Dicroantho*, Webb, sed satis diversa. Specimen mancum sub hoc titulo, ex Mostaganem in herb. Kewensi est aliena planta. Semina immatura tenuiter marginata.

NASTURTIUM (*R. Br. in H. Kew.* iv. 109).

N. OFFICINALE (*R. Br. l. c.*; *DC. Pr.* i. 137).
Mar. sept.—Tanger!
Mar. occid.—Mogador (*Lowe Cat.*).
Mar. merid.—In regione inferiore Atlantis Maj. pr. Amsmiz, *J. D. H.*! et in subalpinis supra Arround circ. 2400 m.!
Ar. Geog. Herba amphigæa, in temperatis, frigidioribus et calidioribus hemisphæræ borealis frequens.

N. ATLANTICUM (*Ball, Journ. Bot.* 1873, 297). (Plate IX.)
Bienne (?), cæspitosum, glaberrimum, ex collo radicis longæ verticalis caules breves debiles emittens; folia (fere omnia basilaria) profunde pinnatipartita, lobo terminali anguloso-rotundato, lateralibus inæqualibus, spathulatis vel oblongo-ellipticis, angulatis; pedicelli breves graciles, non incrassati; petala parva, ochroleuca; siliqua (immatura) lævis, subtorulosa, enervis; stylus apice subclavatus.
Mar. merid.—In regione superiore Atlantis Majoris—Aït Mesan supra Arround! Tagherot! a 2200 m. usque 2800 m.
Ab affinibus (*N. asperum*, Boiss. (*Sisymbrium*, L.; DC. Prod.) et *N. Boissieri*, Coss.) differt imprimis habitu et foliis diversissimis, floribus minoribus, ochroleucis (fere albidis) nec flavis, pedicellis gracilibus nec incrassatis, siliqua enervi, nec ut in illis valvæ basi nervo notata. Stylus longitudine variabilis.

ARABIS (*L. Gen.* 818).

A. VERNA (*R. Br. in H. Kew.* iv. 105; *DC. Pr.* i. 142, *L.* sub *Hesperide*).
Mar. sept.—In monte Beni Hosmar! In eodem monte et in Djebel Dersa olim legit Webb!
Ar. Geog. Regio Mediterranea, exclusa Macaronesia.

A. ALBIDA (*Stev. Cat. H. Gor.* 51; *DC. Pr.* i. 142).
Mar. merid.—In reg. subalpina Atlantis Majoris, in ascensu jugi Tagherot versus 2600 m.! Fere eodem loco, anno 1873, specimen mancum legerunt R. et Fr.!
Ar. Geog. Montes regionis Mediterraneæ, sed deest in Gallia et in peninsula Iberica. In Italia media (territ. Lucensi) descendit in zonam *Oleæ Europææ*. In montibus ins. Teneriffa a 2200 ad 2700 m. se tenet.
Beatus P. B. Webb (in Phyt. Can. i. 63) et cel. Boissier (in Fl. Or. i. 174) plurimas sic dict. species orientales *A. albidæ* rite conjunxerunt,

scil. *A. caucasica* (W. Enum. Supp. 45), *A. viscosa* (DC. Syst. ii. 216), *A. thyrsoidea* (Sibth. et Sm. Fl. Gr. tab. 642), *A. longifolia* (DC. Syst. ii. 219), *A. brevifolia* (DC. Syst. ii. 218), *A. Billardieri* (DC. Syst. ii. 218). Ab his omnibus specimina atlantica discrepant foliis inferioribus, et caudiculorum profunde sinuatis vel repando-dentatis, caulinis etiam magis profunde dentatis.

Procul dubio est forma *A. alpinæ* sed satis constans et ideo pro subspecie habenda.

ARABIS ERUBESCENS (*Ball, Journ. Bot.* 1873, 297).

Stirps male cognita e grege *A. alpinæ* sed cum ea confundi nequit. Ab hac differt insigniter sepalis basi æqualibus coloratis, petalis dimidio minoribus erubescentibus, eorum lamina angustiore, pilis caulinis simplicibus vel apice furcatis, nec stellato-ramosis.

Mar. merid.—In regione alpina Atlantis Majoris. In jugo Tagherot, ultra 3000 m., specimen unicum immaturum et incompletum legi!

A. AURICULATA (*Lam. Dict.* i. 219; *DC. Pr.* 143).

Mar. merid.—In regione subalpina Atlantis Majoris. In convalle Aït Mesan supra Arround a 2400 m. ad 2550 m.! In jugo Tagherot usque 2800 m.! In monte Djebel Tezah a 2500 m. ad 2800 m.!

Ar. Geog. Europa media. Montes regionis Mediterraneæ, exclusa Macaronesia.

Specimina in monte Djebel Tezah lecta habent siliquas breviores. Nonnulla (versus 2800 m. lecta) sunt tenuiora pauciflora, fere var. β *Sinaica* (Boiss. Fl. Or. i. 169).

A. PUBESCENS (*Poir. Suppl.* i. 413; *DC. Pr.* i. 145),=Turritis pubescens (*Desf. Fl. Atl.* ii. 92, tab. 163).

Mar. sept.—In monte Beni Hosmar! et in rupibus calcareis pr. Tetuan! ubi eam olim legit P. B. Webb.

Ar. Geog. Species propria Algeriæ et montium Tetuanensium.

Siliquæ erectæ strictæ subsessiles pubescentes, valvis dorso obsolete 1-nervosis, in stylum attenuatæ. Semina uniseriata exalata. Stigma bifidum.

A. decumbens (*Ball, Journ. Bot.* 1873, 297). (Plate X.)

Perennis, cæspitosum, e collo radicis caules plurimos debiles decumbentes emittens; folia radicalia obverse lanceolata, acute repando-dentata, in petiolum attenuata, caulina ovato-lanceolata, profunde dentata, suprema linearia subintegra, omnia ex pilis rigidis trifurcatis scabriuscula; pedicelli filiformes, patentes, siliquæ ¼ partem æquantes; petala alba seu dilute carnea; siliquæ compressæ subtorulosæ erecto-patentis valvæ margine parum incrassatæ, dorso obsolete nervosæ; stylus filiformis, glaber, pro genere longiusculus; stigma vix (aut ne vix) bifidum.

W.H.Fitch lith

ARABIS DECUMBENS, *Ball*

Fitch imp

W.H.Fitch lith.

ARABIS CONRINGIOIDES, *Ball.*

Fitch imp

Mar. merid.—In regione subalpina Atlantis Majoris—Aït Mesan, supra Arround! a 2100 m. ad 2600 m. Djebel Tezah! a 2400m. ad 2500 m.

Differt ab *A. pubescente*, cui proxima, habitu omnino diverso, pedicellis patentibus nec adpressis, siliquis magis torulosis, stylo longiore basi discreto. Tabula Fontanesiana *A. pubescentis* habet siliquas truncatas, stylo subnullo præditas; in speciminibus nostris prope Tetuan lectis video siliquas semper in stylum attenuatas.

ARABIS CONRINGIOIDES (*Ball, Journ. Bot.* 1873, 297). (Plate XI.)

Radix lignosa, perennis, caules plurimos erectos, subsimplices, foliatos emittens; herba tota glaberrima, glaucovirens; folia inferiora orbiculata, in petiolum longum sensim attenuata, caulina inferiora elliptica, basi auriculata, auriculis subangulatis, superiora ovato-cordata, semiamplexicaulia, omnia integerrima; pedicelli numerosi, conferti, filiformes, erecto-patuli, siliquæ $\frac{1}{3}$ vel $\frac{1}{4}$ partem æquantes; calyx basi subæqualis, sepalis purpurascentibus; petala alba, apice rotundata in unguem sensim attenuata, suberecta; siliqua erecta, elongata, lævis, subcylindrica, nervo dorsali subobsoleto notata, in stylum brevem truncatum attenuata; semina 1-seriata.

Mar. merid.—In regione alpina et subalpina Atlantis Majoris—in jugo Tagherot! a 3000 m. ad 3500 m.; in monte Djebel Tezah! a 2100 m. ad 2800 m.

Species distinctissima, nulli proxima, facie *Conringiæ orientalis* sive *C. clavatæ*, Boiss.

CARDAMINE (*L. Gen.* 812).

C. HIRSUTA (*L., DC. Pr.* i. 152).

Mar. sept.—Tanger (in monte Djebel Kebir)! In umbrosis collium inter Tanger et Tetuan! In monte Beni Hosmar pr. Tetuan!

Ar. Geog. Regiones temperatæ hemisphæræ borealis. Per regionem Mediterraneam (exclusa Macaronesia) late diffusa.

—— ——, var. SYLVATICA, = C. sylvatica (*Lk. in Hoffm. Phyt. Bl.* i. 50).

Mar. sept.—In monte Beni Hosmar pr. Tetuan circa 1000 m.!

Mar. merid.—In regione subalpina Atlantis Majoris—in monte Djebel Tezah circa 2200 m.!

Ar. Geog. Europa borealis et media (excl. arctica). Montes Hispaniæ et Italiæ, sed verisimiliter rara in reg. Mediterranea.

NOTOCERAS (*R. Br. H. Kew.* iv. 117).

N. CANARIENSE (*R. Br. l. c.*; *DC. Pr.* i. 140).

Mar. sept.—Tetuan (*Webb Herb.*)!

Mar. merid.—Inter Misra ben Kara et Marocco!

Ar. Geog. Regio Mediterranea calidior a Belutschia usque in insulas Canarienses. India boreali-occidentalis.

ALYSSUM (*L. Gen.* 805; *H. et B. Gen. Pl.* i. 73).

A. ALPESTRE (*L., DC. Pr.* i. 161), var. SERPYLLIFOLIUM = A. serpyllifolium (*Desf. Fl. Atl.* ii. 70).

Mar. merid.—In regione media et superiore (?) Atlantis Majoris. In convalle Aït Mesan circa 1400 m. florens et fructiferum legi 15 Majo 1871! Ejusdem stirpis specimen mancum legerunt in jugo Tagherot cl. Rein et Fritsch anno 1873! Denuo cel. Cosson benevole communicavit specimina in monte Djebel Afougueur ab indigena Ibrahim lecta mense Junio 1874!

Ar. Geog. A. alpestre est species polymorpha in montibus Europæ mediæ et regionis mediterraneæ late diffusa. Var. nostra montium peninsulæ Ibericæ et Africæ borealis incola est.

Forma Fontanesiana a nobis lecta vix differt ab *A. alpestre,* var. *β. suffrutescens* (Boiss. Fl. Or. i. 268). Hujus (monente cel. Boissier) synonyma sunt *A. tortuosum β. orientale* (DC., Prod. i. 164), *A. Savranicum,* Andr., et *A. serpyllifolium* (Griseb. Spic. i. 276).

—— ——, var. MACROSEPALUM (*Ball, Journ. Bot.* 1873, 298).

Differt a typo sepalis majoribus subpersistentibus siliculam semimaturam æquantibus, siliculis basi ellipticis, nec cuneatis, stylo siliculam subæquante.

Mar. merid.—In regione media Atlantis Majoris, in convalle Amsmiz!

A. MONTANUM (*L., DC. Pr.* i. 162), var. ATLANTICUM, *nob., an Boiss.?* =A. atlanticum (*Desf. Fl. Atl.* ii. 71, tab. 149; *DC. Pr.* i. 161).

Mar. merid.—In regione subalpina et alpina Atlantis Majoris. In monte Djebel Tezah a 2500 m. usque 3300 m.!

Ar. Geog. Varietas nostra habitat in montibus Africæ borealis et forsan Hispaniæ Granatensis. Formæ arcte affines per Europam mediam et regionem Mediterraneam (exclusa Macaronesia) diffusæ.

Specimina nostra bene convenient spec. in monte Djebel Cheliah Algeriæ lectis (*Balansa, Pl. d'Algérie,* No. 898). Ab icone Fontanesiana differre videntur caulibus subprostratis, et sepalis persistentibus. Specimina Hispanica quæ vidi et ipse legi fructifera in montibus Sierra Nevada ad aliam formam hujus speciei polymorphæ pertinere videntur. In his caules erecti rigidiusculi, planta tota ex squamis stellatis multiradiatis lepidotis dense incana. In spec. ab ipso Boissier in Sierra de Mijas anno 1837 lectis filamenta majora alata, nec dentata ut in *A. montano* typico, et in pl. nostra.

A. montanum est certe species polymorpha quibus adsociandæ sunt velut varietates vel subspecies plurimæ ab auctoribus jam descriptæ, et formæ non paucæ hucusque ineditæ. Inter varietates cum *A. atlantico,* Dsf., enumeranda sunt *A. diffusum,* Ten., et *A. repens,* Baumg. Subspecies, notis stabilioribus agnoscendas, sistunt *A. flexicaule,* Jord., *A. cuneifolium,* Ten., et *A. Wulfenianum,* Bernh. Hoc novissimum, in Alpibus Carnicis et Juliis sat frequens, non habet siliculas semper glabratas.

Hæ, pace cel. Boissier, non raro sunt squamis lepidotis adspersæ, basi tamen semper cuneata, stylo longiore, ab illis *A. montani* genuini dignoscendæ.

Alyssum campestre (*L., DC. Pr.* i. 163).

Mar. merid.—In planitie, unde se protendit usque in regionem subalpinam Atlantis Majoris. Prov. Shedma! Tasseremout! Aït Mesan circ. 1400 m.! et iterum ad 2300 m.!

Ar. Geog. Europa media. Regio Mediterranea omnis (exclusa Macaronesia).

A. calycinum (*L., DC. Pr.* i. 163).

Mar. merid.—Rarius occurrit in planitie et in regione subalpina Atlantis Majoris. Prov. Shedma, prope Aïn Oumast In convalle Aït Mesan ad 1200 m. et in jugo Tagherot usque 2700 m.!

Ar. Geog. Europa media. Regio Mediterranea (exclusa Macaronesia).

In calidioribus fit plantula subsimplex erecta 2–3-pollicaris; in frigidioribus e basi ramosissima subcæspitosa.

A. spinosum (*L., DC. Pr.* i. 164; *Boiss. Voy. Esp.* ii. 45, sub *Ptilotricho*).

Mar. merid.—Crescit abunde in regione subalpina et alpina Atlantis Majoris in convalle Aït Mesan a 2200 m. usque 3300 m.

Ar. Geog. Regionis Mediterraneæ pars occidentalis, e Gallia Narbonensi ad Sierra Nevada; et in Africa boreali-occidentali. In Macaronesia deest.

A. maritimum (*Lam. Dict.* i. 98; *DC. Pr.* i. 164; *Desv. Journ. Bot.* iii. 162, sub *Lobularia*; *R. Br. in Clapp. Voy. App.* p. 214, sub *Kœniga*).

Synonyma Linnæana confusa. Est enim *Clypeola maritima* (L. Mant. 426), et *Alyssum halimifolium* (L. Sp. Pl. ii. 207), et *A. minimum*, L., Sp. Pl. ii. 908).

Mar. sept.—Frequens pr. Tanger! (*Salzm. Exsicc.*)! prope Tetuan! Legi etiam in monte Beni Hosmar! ubi jam legerat Webb.

Mar. occid.—Djebel Hadid haud procul Mogador, *J. D. H.*!

Mar. merid.—In regione inferiore Atlantis Majoris—pr. Milhain!

Ar. Geog. Regio Mediterranea littoralis (inclusa Macaronesia).

—— ——, var. **lepidoides**, *nob.*

Differt a typo habitu graciliore, siliculis minimis in racemo confertis, nec ut in typo racemo basi laxo.

Mar. merid.—Ad radices Atlantis Majoris, supra Seksaoua! et in prov. Mtouga!

A. libycum (*Viv. Pl. Lib.* p. 34, tab. 16, sub *Lunaria*; *R. Br. in Clapp. Voy. App.*, sub *Kœniga*).

Mar. occid.—Mogador in arenosis! (*Lowe Cat.*) et in rupibus insulæ! Prope Aïn el Hadjar!

Ar. Geog. Regio Mediterranea calidior imprimis occidentalis (Hispania australis, Africa boreali-occidentalis, Macaronesia). Nascitur etiam in Persia australi et in Arabia Petræa.

DRABA (*L. Gen.* 800).

D. HISPANICA (*Boiss. El.* p. 8, *et Voy. Esp.* tab. 13; *Walp. Rep.* i. 147).

Mar. merid.—In regione superiore Atlantis Majoris legimus in monte Djebel Tezah a 2100 m. ad 3000 m.!

Specimina nostra ab exemplaribus Hispanicis et Algeriensibus paululum recedunt siliculis ovatis stylum versus attenuatis, minus hispidis (interdum glabrescentibus), pilis semper simplicibus, nec pilis ramosis commixtis, petalis minoribus styli longitudinem vix attingentibus.

Ar. Geog. Hispania Granatensis, Africa borealis.

Formæ arcte affines per montes Europæ meridionalis, Asiæ minoris et Syriæ diffusæ.

EROPHILA (*DC. Syst.* ii. 356).

E. VULGARIS (*DC. l. c.*; *DC. Pr.* 172),=Draba verna, *L.*

Mar. sept.—In monte Beni Hosmar pr. Tetuan!

Ar. Geog. Europa omnis (excl. arctica). Oriens. Africa borealis, ubi rara. In Macaronesia non indicata.

MALCOLMIA (*R. Br. in H. Kew.* iv. 121).

M. LITOREA (*R. Br. l. c.*; *DC. Pr.* i. 187).

Mar. sept.—Tanger! (*Salzm. Exsicc.*)! (*Webb Herb.*)!

Mar. occid.—Casa Blanca (*R. et Fr. spec. in Hb. Kew.*)!

Ar. Geog. Litora Oceani a Cherbourg usque ad fretum Herculis. Secus mare Mediterraneum in Hispania et Hetruria. Africa boreali-occidentalis.

M. LACERA (*L. Sp.* 926, sub *Cheirantho*; *Lam. Dict.* iii. 332, sub *Hesperide*; *DC. Syst.* ii. 445, *et Prod.* i. 188), var. PATULA, =M. patula, (*DC. Syst.* ii. 444, *et Prod.* i. 187).

Mar. occid.—Valde frequens in arenosis prope Mogador! et in reg. litorea usque Aïn el Hadjar!

Ar. Geog. Hispania centralis. Ager Mogadorensis. Arcte affinis *M. laceræ* habitat in reg. litorali Lusitaniæ et Hispaniæ meridionalis.

Huc verisimiliter specimina a Broussonnet in agro Mogadorensi lecta quæ ill. A. P. De Candolle sub *M. lacera* (Syst. *l. c.*) disposuit. Re vera *M. lacera* et *M. patula* sunt formæ ejusdem speciei. In hac folia linearia integra, in illa oblongo-linearia, pinnatifido-sinuata. Ab his differt *M. Broussonnetii* stylo basi scabrido, foliis sæpe latioribus integris, vel breviter repando-dentatis; nec video aliam notam diagnosticam. In omnibus stylus filiformis elongatus, apicem versus glaber, vel tenuissime papilloso-scaber.

—— ——, var. BROUSSONNETII, = M. Broussonnetii (*DC. Syst.* ii. 445, *et Prod.* i. 184; *Deless. Icon. Sel.* ii. tab. 60).

Mar. occid.—In arenosis pr. Mogador! (*Brouss.*) *DC. l. c.* Inter Shedma et Mogador legit G. Maw et specimina pulchra mihi benevole dedit!

Mar. merid.—Prope Mesfioua unicum specimen legi!

Ar. Geog. Nimis incerta, vix ultra territ. Maroccanum.

M. Broussonnetii est *M. patulæ* forma vegetior, sæpius statura major, ramis rigidioribus, floribus majoribus. In spec. nostris tamen flores paullo minores quam in icone Delessertiana. Quid sit *M. Broussonnetii* auct. Floræ Hispanicæ est mihi res dubia. Specimina sub hoc titulo a Boissier et Reuter prope Gibraltar anno 1837 lecta, et quæ ipse legi anno 1871, mihi videntur magis affinia *M. litoreæ*, et forte ejusdem varietas foliis profunde sinuatis. An diversa sit *M. erosa* (Lag. Cat. Hort. Matr. 1814, p. 20, sub *Hesperide*, DC. Syst. ii. 446) ex descriptione incompleta non satis apparet.

M. NANA (*DC. Syst.* ii. 486, *et Prod.* i. 195; *Coss. in Bull. Soc. Bot. Fr.* x. 397, sub *Sisymbrio, Boiss. Fl. Or.* i. 222), = M. binervis (*Boiss. Ann. Sc. Nat.* 1842, 71), = Sisymbrium binerve (*C. A. M. Enum.* p. 189; *Jaub. et Sp. Ill. Pl. Or.* tab. 289), = Hesperis ramosissima (*DC. Prod.* i. 189), = M. confusa, *Boiss. Fl. Or.* i. 221.

Mar. sept.—Specimina duo semipollicaria florentia detexi inter cæspites gramineæ cujusdam in saxosis prope Tetuan lectæ!

Ar. Geog. Species per regionem Mediterraneam fere omnem late dispersa. In Gallia meridionali, in Italia, Græcia, et in Africa boreali hinc inde occurrit. In litore Maris Caspii legerunt Hohenacker, C. A. Meyer, et Buhse; et in maritimis Anatoliæ (suadente Boissier) olim legit Tournefort.

Pace cel. Boissier differentiæ inter *M. nanam* et *confusam*, Boiss., omnino instabiles sunt.

Speciminibus ad Mare Caspium prope Baku lectis plantulæ nostræ adamussim conveniunt nisi stylo aliquantulum breviore. Distributio hujus speciei, forsan ex statura minima a viatoribus prætermissæ, admodum singularis.

SISYMBRIUM (*All. Fl. Ped.* i. 274).

S. OFFICINALE (*L.*, sub *Erysimo, Scop. Fl. Carn.* ii. 20; *DC. Pr.* i. 191).

Mar. sept.—In calcareis prope Tetuan! et in monte Beni Hosmar!

Ar. Geog. Europa media et borealis (excl. arctica). Regio Mediterranea (inclusa Macaronesia). In Americam advecta.

S. IRIO (*L., DC. Pr.* i. 192).

Mar. sept.—Tanger (*Schsb. sec. Cosson*). Visum pr. Tetuan!

Mar. occid.—Casa Blanca!

Mar. merid.—Sheshaoua! Inter rudera urbis Marocco!

Ar. Geog. Europa occidentalis a Britannia ad fretum Herculis. Regio Mediterranea (inclusa Macaronesia). India boreali-occidentalis.

SISYMBRIUM THALIANUM (*Gay in Gaud. Fl. Helv.* iv. 348; *L. et DC.*, sub *Arabide*).

Mar. merid.—In regione subalpina Atlantis Majoris, in monte Djebel Tezah a 2100 m. ad 2300 m.!

Ar. Geog. Europa omnis (inclusa arctica). Sibiria. Regio Mediterranea (excl. Macaronesia).

S. RUNCINATUM (*Lag. Fl. Hisp. ined.*; *DC. Pr.* i. 194).

Mar. orient.—Maharoug (*Warion*), *Coss. Index.*

Ar. Geog. Hispaniæ prov. Murcia. Africa borealis.

—— ——, var. HIRSUTUM, *nob.*, = S. hirsutum (*Lag., DC. Pr. l. c.*)

Mar. merid.—In regione inferiore Atlantis Majoris, in convalle Amsmiz circa 1500 m. specimen unicum legi exemplaribus Hispanicis prope Matritum lectis omnino conforme.

Ar. Geog. Hucusque nonnisi in agro Matritensi et in Atlante Majore detectum.

S. ERYSIMOIDES (*Desf. Fl. Atl.* ii. 84, tab. 158; *DC. Pr.* i. 195).

Mar. merid.—Sat frequens in ruderatis et locis saxosis reg. inferioris. Prov. Shedma! Aïn Beida! in ruderatis urbis Marocco! Seksaoua! Milhain! et alibi visum.

Ar. Geog. Regio Mediterranea imprimis occidentalis, scil. Macaronesia, Hispania australis, Africa boreali-occidentalis, Sardinia; deinde occurrit in Persia australi et Arabia et in Abyssinia. Deest ut videtur in Italia continentali, Græcia, Asia Minore, Syria et Ægypto.

Specimina in solo arido crescentia graciliora sunt, sed vix pro varietate habenda.

ERYSIMUM (*L. Gen.* 814).

E. AUSTRALE (*Gay, Erysim. Diagn.* p. 6),=F. pallens (*Boiss. Voy. Esp. in Add.* p. 716), var. GRANDIFLORUM,=E. grandiflorum (*Desf. Fl. Atl.* ii. 85),=E. longifolium (*DC. Syst.* ii. 504, *et Prod.* i. 199).

Mar. merid.—In regione media et superiore Atlantis Majoris a 1900 m. usque 3000 m. In convalle Aït Mesan unde se protendit usque in jugo Tagherot! In monte Djebel Tezah! Specimina in monte Djebel Afougueur (*Coll. Indig. Ibrahim*) siliquis maturis (nobis prius deficientibus) mense Augusto 1874 lecta, benevole comm. cel. Cosson!

Ar. Geog. Var. nostra montium Africæ borealis et Hispaniæ incola est. Formæ arcte affines per Europam mediam et totam regionem Mediterraneam (exclusa Macaronesia) diffusæ.

Inter tot tantosque viros rei Botanices expertissimos qui genus *Erysimum* tetigerunt sententiæ omnino discordes. Invita natura characteres stabiles frustra quærunt, et limites certos indicare conantur in catena formarum affininium quam maxime proximarum.

In speciminibus nostris folia sæpius anguste linearia sed interdum latiora, semper tamen integerrima. Pedicelli sæpissime calycis longitudinem dimidiam attingentes, sed interdum longiores. Siliquæ tenues ex pilis adpressis undique (etiam in angulis) canescentes. Semina exangulata. Confer Gr. et God. Fl. Fr. i. 89.

Exemplaribus permultis hujus gregis accurate observatis species s. d. Europeæ videntur omnes sub *E. Cheiranthio*, Pers., velut subspecies seu varietates enumerandæ. Synonymia extricatu dificillima.

BRASSICA (*L. Gen.* 820; *B. et H. Gen. Pl.* i. 84).

[In genere a cel. Bentham et Hooker reformato cum *Brassicis* veris (Linnæano sensu) enumerantur sicut subgenera *Sinapodendron*, Lowe, *Sinapis*, L., *Erucastrum*, Schimp. et Spenn., et *Hirschfeldia*, Mœnch. His forsan melius addenda erit *Diplotaxis*, genus charactere nullo satis stabili fulcratum. Plurimæ species habitu proprio a *Brassicis* distinguuntur, sed *Diplotaxis virgata, D. siifolia, D. auriculata* nec habitu nec charactere a *Brassica* dignoscendæ, et nisi obstitisset auctoritas gravissima *Diplotaxin* cum cæteris generibus supra memoratis sub *Brassica* enumerare maluissem, duce cel. Boissier (Voy. Esp. ii. 32), etsi vir celeb. in Flora Orientali sententiam mutavit.]

B. TORULOSA (*Durieu in Rev. Bot.* ii. 434; *Expl. Bot. Alg.* i. 74; *Walp. Ann.* i. 48).

Mar. sept.—Tanger (*Salzm. Exsicc. sub* Diplotaxi catholica)! (*Webb Herb.*); Tetuan (*Webb Herb.*)!

Mar. occid.—Mazagan! Mogador (*Balansa, Coss. Index*).

Ar. Geog. Africa boreali-occidentalis; Hispania?

Nimis proxima *Diplotaxi siifoliæ*, Kze.; hanc ægre distinguo siliquæ rostro longiore tenuiore insigniter trinervi, nec ut in *D. siifolia* sæpius obsolete trinervi.

B. FRUTICULOSA (*Cyr. Pl. Var. Neap.* fasc. 2, p. 7, tab. 1; *DC. Pr.* i. 216).

Mar. occid.—Prope Mogador (legit Lowe, sed determinatio incerta)? Cel. Cosson spec. Loweanum cum *Sinapi radicata* (Desf. Fl. Atl. ii. 98, tab. 167) comparavit et in eadem sententia facile hæreo.

Sinapis hispida, Desf. est enim, ut mihi fidem fecerunt specimina (Balansa, Pl. d'Alg. No. 50) ex Mostaganem, varietas hispida *Brassicæ fruticulosæ,* Cyr. Confer tamen Boiss. Fl. Or. i. 393, de *B. fruticulosa.*

B. VARIA (*Durieu in Rev. Bot.* ii. 434; *Walp. Ann.* i. 48), = Erucastrum varium (*Durieu, Expl. Bot. Alg.* tab. 75).

Mar. merid.—In saxosis aridis pr. Seksaoua! Milhain!

Ar. Geog. Marocco; Algeria occidentalis.

Inter spec. duo supra Seksaoua lecta unum refert potius var. *β. mon-*

tanam, Dur. *l. c.* Siliquæ pubescentes in spec. nostris sunt magis patentes quam in spec. e loco classico pr. Oran receptis.

Brassica elata (*Ball, in Journ. Bot.* 1873, 298). (Plate XII.)

Perennis; caulis erectus, simplex, 3–6-pedalis, superne glaberrimus subaphyllus; folia radicalia (10–14-pollicaria) et caulina inferiora lyrato-pinnatifida, lobo terminali maximo, rhomboideo, inæqualiter crenato-dentato, lateralibus oppositis alternisve, ovato-cuneatis, dentatis, rachi lata cum nervis lateralibus albo-rubente, omnia hispido-incana; inflorescentia pyramidalis e ramis brevibus patulis subæqualibus; pedicelli breves, stricti; sepala erecta, obtusa, pilosiuscula; petala saturate lutea, limbo subrotundo; siliqua subtorulosa, superne nervosa, in rostrum conicum 1–2-ovulatum trinerve attenuata.

Mar. merid.—In regione inferiore Atlantis Majoris—in rupibus apricis prope Seksaouna! et Milhain! circ. 1000 m. Huc verisimiliter frustulum mancum in monte Djebel Afougueur ab indigena Ibrahim lectum et a cel. Cosson benevole communicatum!

Species insignis, ab affinibus omnino dissimilis. Proxima est *B. bæticæ*, Boiss., sed in hac rami laterales distantes erecti, nec velut in nostra planta versus apicem caulis approximati patuli, siliquæ rostrum biovulatum, pedicelli erecto-patentes. Ill. Boissier calycem *patentem B. bæticæ* tribuit, et sepala *obtusa*, dum in tabula (Boiss. Voy. en Esp. pl. 9) pictor sepalum *acutum* perperam delineavit. In speciminibus siccis mihi obviis sepala erecta nec patentia videntur. In eadem tabula siliquæ rostrum ovulis 2 abortivis ostenditur. Ubi ovulum unum alterumve fertile adest rostrum fit longius et siliquæ dimidiam longitudinem attingit. In specie nostra et in sequente siliqua quam in *B. bætica* multo minor.

B. rerayensis (*Ball, Journ. Bot.* 1873, 298). (Plate XIII.)

Radix perennis; caulis e basi adscendente erectus 1–2 furcatus, glaberrimus, subaphyllus; folia radicalia parva, incano-hirsuta, runcinato-lyrata, segmentis basin versus alternis, caulina pauca demum linearia; racemus brevis, pauciflorus; pedicelli erecto-patuli, tenues, siliquam $\frac{1}{2}$ æquantes; rostrum tenue, aspermum (?), siliquæ $\frac{1}{4}$ seu $\frac{1}{5}$ partem attingens; sepala elliptico-oblonga, pilosa; petala saturate lutea.

Mar. merid.—In regione subalpina Atlantis Majoris in convalle Aït Mesan, a 2000 m. ad 2500 m.

Fructus in speciminibus nostris omnino immaturus, melius exploratus forsan ovulum in rostro detectum fuerit. Quocunque fit a *Brassicis* planta nostra nullomodo divellenda. *B. bætica*, Boiss., proxime affinis, differt foliis glabris vel ex setis brevibus sparsis scabrida, racemo elongato, siliqua duplo longiore, rostro crasso dispermo, nec tenui aspermo.

B. nigra (*L. et DC. Pr.* i. 218, sub *Sinapi*; *Koch, Deutsch. Fl.* iv. 713; *Boiss. Fl. Or.* i. 390).

Mar. sept.—Tanger (*Salzm. Exsicc.*)!

W.H.Fitch lith.

BRASSICA ELATA, *Ball.*

Fitch imp

W.H.Fitch lith.

BRASSICA BERAYENSIS, *Ball.*

Fitch imp

Ar. Geog. Europa (exclusa arctica); regio tota Mediterranea.

Specimen immaturum et incertum a *J. D. H.* prope Tingidem lectum forsan huc spectat.

BRASSICA ARVENSIS (*L. et DC. Pr.* i. 219, sub *Sinapi,*=B. sinapis (*Vis. Fl. Dalm.* iii. 136).

Mar. sept.—Tanger (*Webb Herb.*)!

Mar. merid.—? Specimen mancum valde incertum legi pr. Sheshaoua! Spec. alterum pariter incertum pr. Ourika legerunt R. et Fr.!

Ar. Geog. Europa et Asia temperata; regio Mediterranea.

B. ALBA (*L. et DC. Pr.* i. 220, sub *Sinapi*; *Boiss. Voy.Esp.* ii. 39).

Mar. occid.—Mogador (*Lowe Cat.*).

Forsan est potius species sequens. *B. alba* hucusque in Imp. Maroccano non alibi visa sæpe cum seminibus cerealibus in terras longinquas aufertur.

Ar. Geog. Verisimiliter indigena in regione Mediterranea orientali, unde versus occidentem usque Insulas Canarienses, et per Europam mediam diffusa est.

B. HISPIDA (*Schsb. Gen. Marok.* p. 182, tab. 4, *et DC. Pr.* i. 220, sub *Sinapi*, non Tenore).

Mar. occid.—Verisimiliter ex agro Mogadorensi orta sunt semina a Schousboe culta.

Mar. merid.—In arvis pr. Seksaoua!

Ar. Geog. Algeria; Marocco; Macaronesia.

Tabula Schousbœana effigies plantæ cultæ ex seminibus Maroccanis—verisimiliter ex agro Mogadorensi. Planta spontanea gracilior est, et foliis multo minoribus prædita.

B. hispida, Tenore, est *Eruca sativa*, Lam.

B. ADPRESSA (*Moench, Meth.* 261, sub *Hirschfeldia*; *Bois. Voy. Esp.* ii. 38),=Sinapis incana (*L., DC. Pr.* i. 220),=Erucastrum incanum (*Koch, Syn.* p. 56).

Mar. sept.—Tetuan (1851)!

Mar. merid.—Misra ben Kara haud procul Marocco! Keira (*Balansa*), *Coss. Index.*

Ar. Geog. Europa occidentalis; regio Mediterranea fere omnis (inclusa Macaronesia).

—— ——, var. LASIOCARPA, *nob.*=Sinapis heterophylla (*Lag. Cat. Hort. Matr.* 1816; *DC. Pr.* i. 220).

Mar. merid.—Mesfioua! In convalle Aït Mesan circ. 1300 m.!

Spec. nostra a typo longius recedunt quam spec. quæ ex Hispania vidi.

B. GENICULATA (*Desf. Fl. Atl.* ii. 98; *et DC. Pr.* i. 218, sub *Sinapi*).

Mar. merid.—Sheshaoua! In hortis et ruderatis urbis Marocco specimina immatura legimus!

Ar. Geog. Africa borealis.

Hæc species, cum *B. nigra* ab ill. A. P. De Candolle adsociata, meliore jure in § *Hirschfeldia* enumeratur. Habet rostrum 1–2-spermum et siliquam nullomodo tetragonam, gaudet enim hæc nervo medio parum prominulo nervis lateralibus evidentibus, quibus notis *B. adpressæ* potius quam *B. nigræ* propius accedit.

Brassica nervosa (*Ball, Journ. Bot.* 1873, 299).

Annua (?), ramosa; folia radicalia lyrata inciso-dentata, caulina pauca lanceolata, omnia in petiolo et nervis hirta; petala (pro grege) magna læte lutea; siliquæ brevis insigniter nervosæ pube brevi velutina vestitæ rostrum glabrum, aspermum (?).

Mar. merid.—Specimen unicum mancum legi in prov. Mtouga!

Forsan incaute nomen novum proposui (*loc. cit.*) pro planta male cognita, verisimiliter in § *Hirschfeldia* enumeranda. Ex structura siliquæ et cotyledonibus conduplicatis ad *Brassicas* certe referenda.

Brassica, spec. nov. ?

Mar. sept.—Cel. J. D. Hooker specimen legit, verisimiliter inter Tanger et Tetuan, cui desunt flores et folia inferiora. Proximum videtur *Sinapi Allionii*, Jacq., sed in spec. Hookeriano rostrum valvarum dimidio æquilongum, eximie trinerve, compressum, subanceps. Folium caulinum unicum quod adest omnino *Barbareæ vulgaris*, R. Br., unde nomen triviale *barbareæfolia* aptum fuerit.

Brassica, spec. nov. ?

Mar. sept.—Alterum specimen ex regione collina inter Tanger et Tetuan attulit cel. Hooker, verisimiliter ad *Brassicam* referendum, sed ob fructum nimis immaturum incertum. Planta tota glabra, nisi foliis inferioribus setis nonnullis retrorsis præditis. Folia inferiora runcinato-pinnatifida. An forma singularis *B. nigræ* ?

Brassica, spec. nov. ?

Mar. merid.—In convalle Amsmiz ad 1400 m. specimen unicum legi!

Annuum; caulis e basi ramosus, ramis subaphyllis 6–8-pollicaribus; folia radicalia et inferiora pauca obverse lanceolata in petiolum attenuata, repando-dentata, præsertim secus nervos strigulosa; racemus elongatus; pedicelli glabriusculi, stricti, calycem subæquantes; sepala æqualia, basi non saccata, purpurascentia; petala in unguem sensim attenuata, ochroleuca, venis saturate violaceis; siliquæ immaturæ subcylindricæ elongatæ erectæ, cum caule ex setis brevibus retrorsis scabræ; rostrum glabrum, tenue, valvarum sextæ parti æquilongum, verisimiliter aspermum. Stigma capitatum breviter bifidum. Habitu a *Brassicis* recedit; planta ulterius inquirenda.

DIPLOTAXIS (*DC. Syst.* ii. 220).

D. HARRA (*Forsk. Fl. Æg.-arab.* 118, sub *Sinapi*; *Boiss. Fl. Or.* i. 388), = D. pendula (*DC. Syst.* ii. 630, *et Prod.* i. 222), = D. hispida (*DC. l. c.*), = D. crassifolia (*DC. l. c.*), = Sisymbrium pendulum (*Desf. Fl. Atl.* tab. 156).

Mar. merid.—Prope Amsmiz circa 900 m.!

Ar. Geog. Hispania; Sicilia. Oriens. Africa borealis.

Siliquæ in spec. nostris sæpius non pendulæ.

D. ERUCOIDES (*L.*, sub *Sinapi*; *DC. Syst.* ii. 631, *et Prod.* i. 222).

Mar. sept.—Tanger!

Ar. Geog. Regio Mediterranea, sed non ubique; deest in Macaronesia, Græcia, Asia Minore et in Ægypto.

D. VIRGATA (*Cav. Præl.*; *DC. Syst.* ii. 631, *et Prod.* i. 222).

Mar. sept.—Prope Tanger!

Ar. Geog. Hispania. Africa borealis.

Specim. nostra Tingitana sistunt lusum vel varietatem seminibus subuniseriatis. Formam majorem foliis profundius divisis legi prope S. Roque!

D. CATHOLICA (*DC. Syst.* ii. 632, *et Prod.* i. 222; *L.* sub *Sisymbrio*).

Mar. sept.—Prope Tetuan legi anno 1851 specimina incompleta verisimiliter huc referenda!

Ar. Geog. Europa australis; Africa borealis.

D. SIIFOLIA (*Kunze in Flora*, xxix. 685; *Walp. Ann.* i. 49).

Mar. sept.—Frequens circa Tanger! In regione collina inter Tanger et Tetuan! In maritimis inter Tetuan et Ceuta!

Mar. occid.—Frustulum plantæ 4-pedalis haud procul Mogador legit J. D. Hooker verisimiliter huc referendum!?

Ar. Geog. In utroque litore freti Herculis, et (?) prope Mogador.

D. siifolia est *D. catholicæ* proxima species, sed forsan satis ditincta foliis et caule pilis patentibus vel subreflexis hispidulis, foliorum laciniis ovatis vel inciso-lobatis acutis, nec linearibus obtusis, petalis ochroleucis nec luteis. Ludit glabrescens sed foliorum indole semper diversa. Confer *Brassicam torulosam*, Dur.

D. TENUIFOLIA (*L.*, sub *Sisymbrio*; *DC. Syst.* ii. 632, *et Prod.* i. 222).

Mar. sept.—Tanger (*Salzm. Exsicc.* sub *D. catholica*)!

Ar. Geog. Europa media et Mediterranea. Tauria. Asia Minor.

D. TENUISILIQUA (*Del. Ind. Sem. H. Monsp.* 1847, 7; *Walp. Ann.* i. 49), = D. auriculata (*Durieu in Expl. Bot. Alg.* tab. 76, sine descr.).

Mar. occid.—Casa Blanca! Aïn el Hadjar, haud procul Mogador, *J. D. H.*!

Mar. merid.—Satis frequens in regione inferiore. In aridis fit tenuior, pumila parviflora. Prov. Shedma prope Aïn Oumast! prope Mskala! Misra Ben Kara! Amsmiz! Prov. Mtouga! et alibi visa.

Ar. Geog. Africa boreali-occidentalis.

Nomen triviale *tenuisiliqua* jure prioritatis conservatur.

Typo Algeriensi sat bene congruunt specimina nostra; paululum variant siliquis longioribus, caule interdum pilis retrorsis hispidulo.

—— ——, var. RUPESTRIS, *nob.*

A typo differt habitu graciliore, caule ramosissimo cum foliis hispidulo, seminibus sæpissime uniseriatis.

Mar. merid.—In rupibus aridis supra Seksaoua! Eandem formam legerunt in prov. Mtouga cl. *R. et Fr.*!

In hac specie pedicelli et siliquæ semper patentes vel erecto-patentes.

ERUCA (*DC. Syst.* ii. 636).

E. SATIVA (*Lam. Fl. Fr.* ii. 496; *DC. Pr.* i. 223), var. STENOCARPA, *Coss.*, = E. stenocarpa (*Boiss. et Reut. Pug.* 8).

Mar. merid.—Frequens in regione inferiore. Tasseremout! Ourika! Reraya! Milhain! Seksaoua usque 1500 m.! Sektana (*R. et Fr. spec. in herb. Kew.*)! Keira (*Balansa*); Akka (*Mard.*), *Coss. Index.*

Ar. Geog. Africa borealis. Forma typica per regionem Mediterraneam (inclusa Macaronesia) late diffusa et in cultis ac ruderatis Europæ mediæ cum seminibus advecta.

Varietas distinguitur habitu tenuiore, siliquis angustioribus subuniseriatis. Adsunt formæ intermediæ.

CARRICHTERA (*DC. Syst.* ii. 64).

C. VELLÆ (*DC. Syst., Ic. et Prod.* i. 224), = Vella annua, *L.*

Mar. merid.—Sat frequens in regione inferiore. Prov. Shedma (pluribus locis)! Sheshaoua! Misra Ben Kara!

Ar. Geog. Europa meridionalis calidior. Oriens. Africa borealis.

SUCCOWIA (*Med. in Ust. Ann.* i. 64).

S. BALEARICA (*DC. Syst.* ii. 642, *et Prod.* i. 224).

Mar. sept.—In monte Beni Hosmar spec. unicum detexit G. Maw et mihi benevole dedit!

Ar. Geog. Regio Mediterranea occidentalis a Sicilia usque Ins. Canarienses, nullibi a mare remota.

CAPSELLA (*Vent.* tabl. iii. 110).

C. BURSA-PASTORIS (*L.*, sub *Thlaspi*; *Moench. Meth.* p. 271; *DC. Prod.* i. 177).

Mar. sept.—Tanger!

Mar. merid.—In regione inferiore et subalpina et alpina Atlantis Majoris.

In convalle Aït Mesan supra Arround (2200 m.?), *R. et Fr. spec. in herb. Kew.*! In jugo Tagherot ultra 3000 m.!

Ar. Geog. Herba amphigæa in temperatis utriusque hemisphæræ et usque in regiones arcticas diffusa, hominum vestigia secuta.

SENEBIERA (*Poir. Dict.* vii. 75).

S. CORONOPUS (*L.*, sub *Cochlearia, Poir. Dict. l. c.*; *DC. Prod.* i. 203).

Mar. sept.—Tetuan!

Mar. merid.—Misra Ben Kara, haud procul urbe Marocco!

Ar. Geog. Europa media; regio Mediterranea (exclusa Macaronesia).

LEPIDIUM (*L. Gen.* 801).

L. SATIVUM (*L., DC. Prod.* i. 204).

Mar. merid.—In ruderatis urbis Marocco!

Ar. Geog. Regio natalis incerta. Per orbem late diffusum, sed sæpius ex hortis aufuga.

L. NEBRODENSE (*Rafin. Préc.* p. 38, sub *Nasturtio*; *Guss. Fl. Sic.* ii. 154; *Boiss. Fl. Or.* i. 355), = L. pubescens (*Tin. Cat. H. R. Panorm.* 150, *non Desv.*), = L. Bonannianum (*Guss. Prod. Fl. Sic.* p. 211), = Lepia Bonanniana (*Psl. Fl. Sic.* 84), var. ATLANTICUM, *nob.*

Folia radicalia spathulata longe petiolata, integra vel lyrata, caulina sessilia vix auriculata, omnia velutina; sepala glabra, purpurascentia; silicula glabra, matura interdum pubescens, breviter emarginata; stylus brevissimus.

Mar. merid.—In regione superiore Atlantis Majoris, vall. Aït Mesan! a 2500 m. ad 3000 m.

An diversum sit *L. stylatum* (Lag. Ann. Cienc. Nat. 1802) non satis liquet; confer Guss. Fl. Sic. *l. c.* Nomen infaustum, dum styli longitudo in hac grege nimis variabilis.

Ar. Geog. Formæ arcte affines per regionem Mediterraneam (exclusa Macaronesia) late diffusæ, nullibi frequentes.

Plurimæ s. d. species sicut varietates sive subspecies enumerandæ, scil. *L. calycotrichum*, Kze. = *L. granatense*, Coss. = *L. Dhayense*, Munby, quocum forsan jungendum est *L. microstylum* (Boiss. & Held. Diag. ser. 2, fasc. vi. p. 21, et Boiss. Fl. Or. i. p. 355). *L. nebrodensis* forma aberrans est (ni fallor) *L. petrophilum*, Coss. Valde affinis est species Europæ occidentalis *L. hirtum*, L., quocum adnumeranda sunt *L. heterophyllum*, Benth., *L. Smithii*, Hook., et *L. Villarsii*, G. et G., dum inter has formas characteres firmos adhuc frustra quærunt botanici. *L. oxyotum*, DC. Syst. = *L. humifusum*, Req., est species insulæ Corsicæ propria, erronee in DC. Prod. vol. i. p. 204, et Boiss. Fl. Or. i. 356, ad Floram Syriacam relata. Specimina enim in herb. Labillardière loci natalis indicatione carent, sed spec. Corsicis omnino conformia sunt. Hoc tamen, etsi siliculæ forma sat bene definitum, est sp. nostræ forsan nimis proxima; vidi inter specimina Sicula *L. nebrodensis* formam intermediam.

Lepidium latifolium (*L., DC. Pr.* i. 207).

Mar. sept.—Legi anno 1851 prope Tetuan ad ostium fluminis!

Ar. Geog. Europa temperata; regio Mediterranea (exclusa Macaronesia); Asia media. Verisimiliter stirps orientalis in regionibus occidentalibus advena.

Biscutella (*L. Gen.* 808).

B. apula (*L., DC. Pr.* i. 182).

Mar. sept.—In monte Djebel Kebir prope Tanger! Prope Tetuan in Monte Dj. Dersa (*Webb Herb.*)!

—— ——, var. **microcarpa**,=B. microcarpa (*DC. Pr. l. c.*).

Mar. occid.—Aïn el Hadjar, haud procul Mogador!

Mar. merid.—In regione inferiore Atlantis Majoris. Tasseremout! Ourika! Aït Mesan usque 1700 m.!

B. lyrata (*L., DC. Pr.* i. 182),=B. raphanifolia (*Poir.*),= B. maritima (*Ten. Prod. Fl. Neap.* 38).

Mar. sept.—Tanger in saxosis! In monte Beni Hosmar supra Tetuan, *J. D. H.*! Prope Tetuan ad rivos fluminis legi anno 1851!

Mar. merid.—In prov. Mtouga! In reg. subalpina Atlantis Majoris supra Arround ad 2200 m. legi specimen unicum siliculis minimis ad varietatem *B. scutulatam* (Boiss. et Reut. Diagn. Pl. Or. ser. 1, i. 41) accedens.

Nihil dubito quin *Biscutellæ* omnes annuæ regionis Mediterraneæ (exclusa *B. obovata*, sp. omnino dubia) pro unius speciei prole haberi debeant. Forma foliorum radicalium, qua nota *B. lyrata*, L., *B. raphanifolia*, Poir., et *B. maritima*, Ten., a cæteris dignoscuntur, subconstans, et hæ meo sensu subspeciem sistunt. Sed notæ diagnosticæ ex caule plus minusve folioso et ramoso, ex siliculis minoribus majoribusve, disco et margine puberulis, vel scabris, vel lævibus, vel disco lævi et margine scabro, omnino fallaces sunt, et inter exemplaria eodem loco nata plane variabiles. Habeo specimen prope Tanger lectum ad *B. bæticam* (Boiss. et Reut. Diagn. Pl. Or. ser. 1, i. 42) accedens. Specimina secus flumen pr. Tetuan lecta sunt proxima *B. maritimæ*, Ten. Sed in hac grege qui nolit speciem in catervam inordinatam divellere de nominibus auctorum parum curare debet.

Thlaspi (*L. Gen.* 802).

T. perfoliatum (*L., DC. Pr.* i. 176).

Mar. sept.—In monte Beni Hosmar prope Tetuan!

Mar. merid.—In regione media Atlantis Majoris, in convalle Aït Mesan circ. 2100 m.!

Ar. Geog. Europa media (in Scandinavia advena). Asia temperata. Regio Mediterranea.

—— ——, var. ROTUNDIFOLIUM, *nob.* = T. rotundifolium (*Tin. Pl. Rar. Sic.* fasc. i. 46), = T. Tineanum (*H. de Pav. Pl. Sic. Exsicc.*).

Mar. merid.—In regione alpina Atlantis Majoris. In jugo Tagherot usque 3200 m.! In monte Djebel Tezah!

Spec. nostra Siculis omnino conformia. Secundum auctores præcipuos siliculæ *T. perfoliati* sunt in quovis loculo 4-ovulatæ. In spec. nostris video sæpe semina 5 in quovis loculo fructus maturi.

Clar. Rein et Fritsch ex regione alpina versus jugum Tagherot retulerunt specimen mancum nimis incompletum, verisimiliter in genere *Thlaspi* ponendum.

IBERIS (*L. Gen.* 834).

I. PARVIFLORA (*Munby, in Bull. Soc. Bot. Fr.* ii. 282), ? = I. Numidica (*Jord. Diagn.* 290).

"Pedicellis fructiferis corymbosis; radice annua; caule a basi ramoso parce hirtulo; foliis glabrescentibus linearibus, valde dentatis quasi pectinatis; siliculis emarginatis, sinu latiusculo, stylo dimidium sinus æquante; petalis subæqualibus vix calycem violaceum superantibus."

Sec. diagnosin Munbyanum, *l. c.*

Mar. merid.—Specimina duo fructifera prope Tasseremout legit cl. G. Maw; quorum unum mihi communicavit!

Ar. Geog. Africa boreali-occidentalis.

Specimina nostra diagnosi supra citatæ haud omnino conformia, sed speciminibus Bourgæanis prope Gharrouban in prov. Oran lectis sat bene conveniunt. In spec. nostro racemus fructifer corymbosus, folia margine setosa, subpinnatifida lobis paucis 1–2 utrinque instructa; pedicelli fructiferi rigidi superne papilloso-scabri, inferne læves; stylus basi alæ siliculæ vix adnatus.

Pace cel. Cosson hæc mihi potius quam *I. pectinatæ*, Boiss., videtur *I. odoratæ*, L., proxima, et forsan ejus subspecies.

I. GIBRALTARICA (*L., DC. Pr.* i. 181).

Mar. sept.—In fissuris rupium montis Beni Hosmar prope Tetuan! eodem loco quo eam olim legit fructiferam beatus P. B. Webb.

Ar. Geog. In promontorio Calpes et in montibus Tetuanensibus.

HUTCHINSIA (*R. Br. in Hort. Kew.* iv. 82).

H. PETRÆA (*L.*, sub *Lepidio*; *R. Br. l. c.*; *DC. Pr.* i. 178).

Mar. sept.—Inter Tetuan et Ceuta! In monte Beni Hosmar prope Tetuan!

Mar. merid.—In regione subalpina Atlantis Majoris. Aït Mesan supra Arround circ. 2300 m.! In monte Djebel Tezah ad 2500 m.!

Ar. Geog. Europa (exclusa arctica). Montes regionis Mediterraneæ (exclusa Macaronesia).

ISATIS (*L. Gen.* 824).

I. TINCTORIA (*L., DC. Pr.* i. 211), var. **LÆTEVIRENS**, *nob.*

Differt a planta Europæa satis variabili foliis læte virentibus, sed non video notas graviores differentiales. Siliculæ obverse lanceolatæ, sæpius apice obtusangulo.

Mar. merid.—Frequens in regione media Atlantis Majoris unde secus torrentes in reg. inferiorem descendit. In convalle Aït Mesan a 1600 m. usque 2000 m.! In convalle Amsmiz 1100–1700 m.! Specimina nostris conformia sub "*I. virens,* Coss. MSS." in montibus Djebel Ouensa et Djebel Afougueur ab indigeno Ibrahim lecta benevole comm. cel. Cosson.

Ar. Geog. Species per Europam mediam et australem, et per Orientem diffusa. Varietas Maroccana est.

CRAMBE (*L. Gen.* 825).

C. HISPANICA (*L., DC. Pr.* 226),=C. reniformis (*Desf. Fl. Atl.* ii. 78, tab. 151; *DC. Pr. l. c.*),=C. filiformis (*Boiss. Voy., an Jacq.*?).

Mar. merid.—In regione media Atlantis Majoris. In convalle Amsmiz a 1500 usque 1800 m.!

Ar. Geog. Peninsula Iberica. Africa borealis.

C. hispanicam, L., et *C. reniformem,* Dsf., sistere unam eandemque speciem mihi haud dubium videtur. Nec in descript. auctorum, nec in exemplaribus plurimis Hispanicis et Algeriensibus a me sedule investigatis, nec in aspectu et habitu plantæ spontaneæ, quam pluries vivam observavi, notam differentialem nisi levissimam detexi. Quid sit vera *Crambe filiformis,* Jacq., hic non dijudicare licet. Nomen triviale Linnæanum certe conservandum.

RAPISTRUM (*Desv. Journ. Bot.* iii. 160).

R. RUGOSUM (*L.,* sub *Myagro*; *Berg. Phyt.* iii. 171; *DC. Pr.* i. 227).

Mar. sept.—Tanger! (*Webb Herb.*)!

Ar. Geog. Europa media; regio Mediterranea omnis. Ludit siliculis hirtis vel glabris.

CERATOCNEMUM (*Coss. et Bal. in Bull. Soc. Bot. Fr.* xx. 239).

"Sepala erecto-patula, lateralia haud saccata. Petala longe unguiculata, limbo integro. Stamina tetradynama, filamentis liberis subfiliformibus inferne complanatis edentulis. Glandulæ hypogynæ quatuor, duæ ad staminum longiorum paria, duæ ad stamina lateralia. *Siliqua* abbreviata, *indehiscens*, coriaceo-indurata mesocarpio suberoso, *biarticulata; articulo inferiore* pedicello vix latiore, tereti-subcompresso, *uniloculari, monospermo, valvis distinctis* sed *cohærentibus in appendicem terminalem triangulari-lanceolatam articulo superiori æquilongam* et in anfractu dorsali articuli superioris receptam *productis*; *articulo superiore* vix secedente, *subrhombeo* apice truncato stylo cuspidato, a latere *compresso*, nervo præminente suturam valvarum articuli inferioris continuante donato, utrinque dorso ad receptionem processus valvaris excavato, *uniloculari, monospermo*, evalvi. Stylus siliqua longior, lanceolato-linearis, tetragonus. Stigma depressum, integrum. Semina oblonga, funiculo brevissimo, *semen articuli inferioris pendulum, superioris erectum. Cotyledones* rectæ, obovato-suborbiculatæ, retusæ, *canaliculato-complicatæ*, radiculam amplexantes.

" Planta annua, erecta, ramosa, pilis simplicibus hirta. Folia oblonga, grosse sinuata dentatave, superiora angustiora sæpe subintegra. Racemi ebracteati, virgati, demum elongati, pedicellis filiformibus demum subclavato-incrassatis. Flores lutei. Siliquæ parvulæ, erecto-adpressæ.

"*Ceratocnemum*, novum genus ex ordine Cruciferarum, juxta *Rapistrum* collocandum, sed distinctum valvis articuli inferioris siliquæ in appendicem articulo superiori æquilongam productis, non abrupte truncatis, articulo superiore subrhombeo compresso utrinque uninervio, non ovoideo vel subgloboso pluricostato.—Nomen generis ob formam insignem articuli inferioris siliquæ e verbis græcis *κέρας* (*cornu*) et *κνημίς* (*ocrea*) conflatum."

Ceratocnemum rapistroides (*Coss. et Bal. l. c.*).

" Planta annua. Caulis erectus, a parte inferiore vel a basi ramosus, teres, pilis albis rigidulis deflexis hirtus. Folia hinc inde præsertim in nervis et ad margines hirta, oblonga, in petiolum brevem angustata, grosse sinuato-subpinnatifida dentatave, superiora angustiora dentata vel subintegra. Racemi ebracteati, primum subconferti, demum elongati virgati laxiusculi. Pedicelli calyce subbreviores, suberecti, demum incrassato-subclavati, hirti. Sepala hirta. Petala lutea, calyce subtriplo longiora, limbo obovato integro venis saturatioribus picto, in unguem exsertum attenuata. Stamina longiora calycem longe excedentia. Siliquæ pilis patentibus hirtæ, 8–10 millim. longæ, erectæ, adpressæ. Semina stramineo-fuscescentia, sub lente tenuissime punctulata. Maio 1867 floriferum et jam fructiferum lectum."

Diagnoses accuratas gen. et spec. nov. ad calcem conservare malui.

Mar. merid.—In monte Djebel Orguis supra Imintenout detexit cl. Balansa ! Legimus 4–6-pedale ramosissimum in sepibus distr. Mesfioua haud procul urbem Marocco ! et nanum (vix pedale) prope Tasseremout !

CAKILE (*Adans. Fam. Pl.* ii. 423).

C. MARITIMA (*Scop. Fl. Carn.* No. 844; *DC. Pr.* i. 185),=Bunias Cakile, *L.*

Mar. sept.—Tanger in arenosis! In arenosis inter Tetuan et Ceuta!

Ar. Geog. Litora maritima totius Europæ et Africæ borealis, in Macaronesia et Africæ litore Atlantico nondum detecta.

Forma arcte affinis in America boreali et in Antillis.

HEMICRAMBE (*Webb, in Ann. Sc. Nat.* ser. 3, xvi. 246, tab. 19).

H. FRUTICULOSA (*Webb, l. c.*; *Walp. Ann.* iv. 215).

Descriptionem Webbianum hic referre licet.

"Suffruticulus glaberrimus caudicibus lignosis, tortuosis, nodosis, nudis ad ramorum apicem foliosis. Folia petiolata, læte viridia, lyrata, basi sæpe auriculata, lobis 2 inferioribus oppositis, 7-nervata, nervis a medio ad lobos divergentibus, venis reticulatis sub epidermide insignita, basi subcordata truncata vel cuneata, lamina 2-2½ poll. longa, 1½-2 poll. lata. Petioli 2-3 poll. longi, ascendentes, basi latiores, subsemivaginantes, supra canaliculati, juniores glandulis nigris inconspicuis conspersi. Ramuli floriferi foliis subduplo longiores. Racemi laxe paniculati. Pedicelli filiformes, floribus duplo longiores, fructiferi elongati, ebracteati. Calyx basi fere æqualis, luteus, patens, mox deciduus, foliolis lanceolatis, concavis, intus nervosis, tenuibus, diaphanis. Petala lutea, calyce duplo longiora, longe unguiculata, unguiculis angustis, laminis obovato-lanceolatis, basi attenuatis, apice rotundatis, integris, ramoso-nervosis. Filamenta edentula, sub medio dilatata, apice subulata. Antheræ æquales lanceolatæ, sub medio affixæ, basi sagittatæ, flavæ. Glandulæ hypogynæ 4, quarum 2 post stamina longiora sitæ iisque alternantes, calcariformes, obtusæ, 2 ante stamina breviora iisque oppositæ, tenues laminiformes ovario applicatæ. Ovarium ellipticum, planum, basi attenuatum, trinerve, margine acutum, ad medium usque alatum. Stylus nullus. Stigma sessile globosum, centro depressum. Siliquæ ellipsoideæ utrinque attenuatæ, apice rostratæ, glabræ. Funiculi recurvi, usque ad medium dissepimento rudimentario immersi. Ovula globoso-pyriformia, sub apice affixa. Semina ovata, compressa, reticulata, fusca. Cotyledones rotundatæ, tenues. Radicula cylindracea cotyledonibus longior."

Mar. sept.—In fissuris rupium calcarearum montis Beni Hosmar supra Tetuan primus detexit beatus P. B. Webb. Eodem fere loco ad 900 m. s. m. legimus vix florentem die 12 Aprilis 1871!

Ovarium (utrinque) trinerve sec descript. Webbianum. In flore innupto video nervos duos laterales conspicuos, medium vero subobsoletum.

Planta singularis inter *Brassiceas* et *Cakilineas* transitum præbens, septo rudimentario, siliquæ articulo inferiore interdum aspermo vel prorsus abortivo. Habitus *Brassicæ*. Caudex basi diametro tripollicaris et ultra.

RAPHANUS (*L. Gen.* 812).

R. RAPHANISTRUM (*L., DC. Pr.* i. 229).

Mar. sept.—Tanger! (*Webb Herb.*)! In regione collina inter Tanger et Tetuan!

Mar. occid.—Casa Blanca!

Ar. Geog. Europa omnis; regio Mediterranea (inclusa Macaronesia).

CAPPARIDEÆ (*Juss. Gen.* p. 242).

CAPPARIS (*L. Gen.* 643).

C. SPINOSA (*L., DC. Pr.* i. 245), var. β, CANESCENS (*Coss. Not. Pl. Crit.* i. 38), = C. herbacea (*Willd. Enum. Ber.* 560; *DC. Pr.* i. 245).

Mar. merid.—In regione inferiore Atlantis Majoris. In convalle Aït Mesan a 1300 ad 1600 m.!

—— ——, var. γ, ÆGYPTIA (*Boiss. Fl. Or.* i. 420), = C. Ægyptia (*Lam. Dict.* i. 605; *DC. Pr.* i. 245).

Mar. merid.—Sat frequens in apricis saxosis ad radices Atlantis Majoris. Gurguri! Seksaoua! Inter Sektana et Frouga (*G. Maw spec.*)! et alibi pluries visa!

Optimo consilio cel. Boissier loc. cit. species plurimas auctorum notis diagnosticis stabilibus non definitas sub typo Linnæano sicut varietates enumeravit.

Ar. Geog. Species per regionem omnem Mediterraneam late diffusa est, sed deest in Macaronesia.

RESEDACEÆ (*DC. Theor. Elem.* p. 214).

RESEDA (*L. Gen.* 608).

R. ALBA (*L., Müll. Arg. in DC. Pr.* xvi. sect. 2, 557).

Mar. sept.—Tetuan!

Mar. occid.—Casa Blanca! Mazagan! Mogador (*Lowe*)!

Ar. Geog. Regio Mediterranea omnis (exclusa Macaronesia). Occurrit in Europa media, præsertim occidentali, forsan non indigena. Verisimiliter introducta in Indiæ orientalis montibus Nilgherry, et in Capite Bonæ Spei.

R. PROPINQUA (*R. Br. Obs. Oudn. Denh. Clapp.* p. 22; *Müll. Arg. in DC. Prod.* xvi. sect. 2, 559), = R. eremophila (*Boiss. Diagn.* ser. 1, viii. 88).

Mar. occid.—Secus Oued Kseb prope Mogador!

Mar. merid.—Prov. Shedma prope Mskala! Prov. Mtouga!

Ar. Geog. Regio desertorum a Syria et Arabia Petræa per Ægyptum, et in plaga Africæ Tripolitanæ et Tunetanæ, et in Marocco meridionali.

R. propinqua est species sat variabilis, in eodem specimine video flores tetrameros et pentameros; scil. sepalis et petalis 4 vel 5. Petala in spec. Maroccanis iconi Müllerianæ (Monog. tab. vi. fig. 90) haud omnino conformia, sed differentiæ parvi momenti. Sepala sæpius subinæqualia, superiora paullo longiora. Capsulæ glandulosæ, sæpissime octocostatæ, costis 4 vel rarius 3 placentis oppositis elevatis subalatis. Semina fere ut in *R. alba.*

R. tricuspis (Coss. in Bull. Soc. Bot. Fr. xx. 241) cujus specimen prope urbem Marocco lectum ex herb. Schousboe debeo humanitati cel. auct., differt a *R. propinqua* imprimis capsula trigona ore tridentato. Forsan pro subspecie habenda; video tamen capsulam in *R. propinqua* interdum, etsi rarius, tridentatam.

RESEDA ATTENUATA (*Ball, in Journ. Bot.* 1873, 299). (Plate XIV.)

Radix perennis; caules 2–3 exiles, 8–12-pollicares; folia inæqualiter pinnatifida, caulina abbreviata, 2–4-juga; spica gracillima, pauciflora; bracteæ lineares, pedicellos brevissimos sæpius superantes; sepala ovato-lanceolata, superiora 3 interdum coalita; petala brevissima calycem vix superantia, staminibus breviora, 2 superiora gaudent appendicula (pro grege) magna, papilloso-ciliolata, concava, et lamina appendiculam æquante, profunde trifida, lobis æqualibus, petala media superioribus subæqualia, petalum inferius in lacinias tres æquales uninervias ultra medium divisum; capsula dentibus quatuor brevibus erectis coronata, pube rara brevissima adspersa.

Mar. merid.—In regione alpina et subalpina Atlantis Majoris, Aït Mesan! et in jugo Tagherot! a 2100 m. ad 3000 m. Ex montibus Djebel Afougueur et Djebel Ouensa (*Coll. Indig. Ibrahim*) specimina benevole comm. cel. Cosson.

Proxima *R. Gayanæ* (Boiss. Voy. Esp. p. 76, tab. 21; Müll. Arg. Monog. p. 111). Differt præsertim petalis minimis, lamina fere ad basin trifida, omnibus appendiculatis, et capsulæ dentibus magis prominentibus. Forsan sicut subspecies enumeranda.

In DC. Prod. xvi. sect. 2, 558, cl. Müller, *R. Gayanam* sub nomine "*R. undata*, L." enumeravit. De *R. undata* inter auctores gravissimos magna est orta dissensio. Ipse Linnæus speciem male cognovit et quoad fructum descriptio (Spec. Pl. ed. 2, p. 644) plane erronea, et auctores fere omnes ad aliam speciem nomen retulerunt. Sententiam primam cl. auctoris Monographiæ secutus sum, et nomen *R. undata* delendum esse censeo.

R. PHYTEUMA (*L., Müll. Arg. in DC. Pr.* xvi. sect. 2, 563).

Mar. merid.—Prov. Shedma! In convalle Amsmiz circa 1200 m.!

Ar. Geog. Europa media. Regio Mediterranea imprimis occidentalis, sed deest in Macaronesia.

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W.H.Fitch lith.

RESEDA ATTENUATA, *Ball.*

Fitch imp

Reseda media (*Lag. Nov. Gen. et Spec.* p. 17; *Müll. Arg. in DC. Pr.* xvi. sect. 2, 563),=R. macrosperma (*Rchb. in Flora*, 1830, i. 130; *Walp. Repert.* ii. 752; *Müll. Arg. Monog.* 133).

Mar. sept.—In monte Djebel Kebir prope Tanger! et in saxosis prope Cap Spartel!

Ar. Geog. Peninsula Iberica. Forma arcte affinis (*R. orientalis*, Boiss.) in Oriente infrequens.

Specimina nostra Hispanicis conformia, sed folia fere omnia integra, capsulæ demum horizontales, nec pendulæ. Præter semina paululum majora petalorum lacinulæ spathulatæ, nec lineares, notam diagnosticam præbent. Adsunt tamen, sed rarius, formæ intermediæ, et hanc pro subspecie *R. Phyteumatis* enumerare malui.

R. diffusa (*Ball, Journ. Bot.* 1873, 299).

Radix biennis (?), caulis e basi ramosissima, diffusa; folia integra vel rarius trifida, oblongo-linearia, obtusa; bracteæ filiformes, (pro grege) longiusculæ; sepala ut in *R. media*, Lag.; petalorum superiorum lamina brevis, antheris vix longior, 3-partita, laciniis lateralibus profunde 3-5fidis, lacinulis apice abrupte spathulatis (fere cochleariformibus); capsula (nondum matura) insigniter 3-dentata, dentibus divergentibus.

Mar. merid.—In rupibus calcareis ab urbe Marocco septentrionem versus legit. cl. G. Maw, et mihi benevole communicavit.

A proxima *R. media*, Lag., recedit petalorum lamina multo minore, lacinulis cochleariformibus, nec obovato-oblongis apice rotundatis, capsulæ dentibus divergentibus, qua nota ad *R. inodoram*, Rchb., proprius accedit. *R. media*, Lag. et *R. inodora* ad subspecies, sub typo *R. Phyteumate*, L., reducendæ mihi videntur. Planta nostra longius a typo recedit.

R. LUTEA (*L.*, *Müll. Arg. in DC. Pr.* xvi. sect. 2, 569), var. MUCRONULATA,=R. mucronulata (*Tin. Cat. H. Panorm.* 1828, p. 280).

Mar. merid.—Prov. Mtouga! Aïn Tarsil! Shedma!

Distinguitur caule stricto subsimplici elongato, capsulæ papillosæ, præsertim immaturæ, dentibus longioribus. Individua vegetiora ad typum revocantur.

Ar. Geog. Varietas nostra (ex Müll. Arg. *l. c.* 570) nascitur in peninsula Iberica et in Algeria et in insula Zante.

Species per Europam mediam et regionem Mediterraneam late diffusa est, sed in Africa boreali infrequens. Deest in Macaronesia, ubi locum tenet species affinis *R. crystallina*, Webb.

R. neglecta (*Müll. Arg. Monog.* p. 178, *et in DC. Pr.* xvi. sect. 2, 568).

Mar. merid.—In rupibus supra Seksaoua!? Frustulum ex Oasi Akka (*Coll. Indig. Mardochæus*) benevole comm. cel. Cosson.

Ar. Geog. Hucusque nonnisi in Algeria meridionali ad fines Saharæ detecta.

Frustula spec. ab Oasi Akka, quæ humanitati cel. Cosson debeo, speciminibus Kralikianis a Müll. Arg. citatis non omnino conformia. Specimen a nobis ad Seksaoua lectum, *R. luteæ* habitu simile, ex forma capsularum propius *R. neglectæ.* Hæc mihi certe forma *R. luteæ,* et forsan potius varietas quam subspecies, videtur. Forma petalorum inter varietates Müllerianas *R. luteæ* valde ludibunda. Quoad notam diagnosticam a magnitudine capsulæ desumptam confer verba ipsius auctoris. Sub *R. neglecta* habet "capsulæ 12 mm. longæ," dum sub *R. lutea* var. *α* legitur "capsulæ sæpius 12 mm. longæ." Denique semina in *R. neglecta* minora et magis numerosa, sed ni fallor adsunt individua intermedia.

RESEDA LANCEOLATA (*Lag. Gen. et Spec.* p. 17; *Müll. Arg. in DC. Pr.* xvi. sect. 2, 572), var. CONSTRICTA, *nob.,*=R. constricta (*Lange, Descr. Pl. Nov. præc. Hisp.* fasc. i. 6, tab. viii., *icon optima*).

Mar. merid.—In regione inferiore Atlantis Majoris. In convalle Aït Mesan a 1200 m. usque 1600 m.! Supra Seksaoua circ. 1500 m.! Djebel Sidi Fars (*Balansa, Coss. Index*).

Ar. Geog. Hucusque nonnisi in Hispania australi visa.

R. constricta sistit varietatem satis insignem, pedicellis longis patulis subhorizontalibus, capsulis longius dentatis erectis. Folia in spec. ab Aït Mesan omnia trifida segmentis latis. Capsulæ dentes divergentes.

R. STRICTA (*Pers. Ench.* ii. 10; *Müll. Arg. in DC. Pr.* xvi. sect. 2, 373), var. SUBSESSILIS (?).

Mar. occid.—Aïn el Hadjar haud procul Mogador!

Specimen unicum legi nondum fructiferum et ideo incertum; differt a spec. Hispanicis pedicellis brevissimis.

Ar. Geog. R. stricta est imprimis species Hispanica: varietates tres a Müller *l. c.* enumeratæ in Africa boreali sat late diffusæ.

R. ELATA (*Müll. Arg. in DC. Pr.* xvi. sect. 2, 578; *Coss. in Bull. Soc. Fr.* xx. 242).

Descriptionem Cossonianam optimam hic referre licet:—

"Planta biennis vel induratione perennans. Caules elati, indurato-frutescentes, ramosi, brevissime puberuli, ramis elongatis virgatis cortice olivaceo-viridi striis albidis. *Folia sub lente brevissime puberula,* in petiolum attenuata, plana, *indivisa lineari-lanceolata* elongata acutiuscula, *vel rarius trisecta* segmentis foliis indivisis conformibus. Racemi densiflori, bracteis apice subcomosi, demum elongati, capsulis inferioribus remotiusculis, superioribus approximatis. *Bracteæ* lanceolato-lineares longe acuminatæ, late albido-marginatæ, glabræ, *flores sub anthesi longe excedentes*, post anthesin cito deciduæ. Calyx 6-sepalus, *sepalis* oblongo-lanceolatis acutiusculis, late albo marginatis, glabris vel dorso brevissime puberulis, *cito deciduis*. *Petala* calyce subduplo longiora, omnium *ungue* albo *suborbiculato* villoso, *lamina pallide lutea, superiorum trisecta lobo medio lineari-spathulato lobis lateralibus* subduplo brevioribus *in lacinias inæquales lineares 6–9-sectis*, lateralium trisecta lobo medio oblongo inferne angustato lobis lateralibus indivisis, inferiorum lobo medio conformi lobis lateralibus sæpius obsoletis. Disci hypogyni lamina majuscula ovata acutiuscula ascendente marginibus recurvis extus concava, utrinque villosa. *Stamina circiter* 40, filamentis inæqualibus, glabris, sub anthera haud dilatatis, mox deciduis. Ovarium oblongo-cylindricum, papilloso-subvelutinum, apice profunde 3-dentatum dentibus glabris, placentis integris. Ovula inordinatim in placentis 3-serialia, in placenta quaque circiter 18–20. *Capsula* longiuscule pedicellata, suberecta, *longa, trigono-subcylindrica*, apice tridentata, *infra dentes vix angustata*, brevissime puberula, placentis integris. *Semina* minuta (immatura tantum nota), *tuberculis minutissimis undique obsita.*"

Mar. merid.—In montibus ad austro-occidentem urbis Maroc, prope Keïra, circiter ad 900 m. detexit cl. Balansa. Legimus in collibus aridis supra Imintenout ad 1100 m.! et in monte supra Seksaoua circ. 1500 m.!

A proxima *R. villosa*, Coss., differt, ut nobis docet cel. auctor, caule foliisque puberulis, non longe pubescenti-villosis, sepalis citius deciduis, petalorum superiorum lobis lateralibus haud cristæformibus, capsulis cylindraceo-trigonis, nec oblongis infra dentes vix angustatis.

In spec. nostris capsula infra dentes evidenter angustata, dentes divergentes multo longiores quam in *R. villosa*, indumentum totius plantæ brevissime hirtulo-scabrum.

RESEDA LUTEOLA (*L., Müll. Arg. in DC. Pr.* xvi. sect. 2, 583).

Mar. sept.—Tanger (*Salzm. Exsicc.*)! (*Webb Herb.*)! Formam latifoliam legimus inter Tetuan et Ceuta!

—— ——, var. AUSTRALIS (*Müll. Arg. l. c.*).

Mar. merid.—In monte supra Seksaoua circa 1400 m.!

—— ——, var. CRISPATA, = R. crispata (*Link, Enum. Pl. H. Ber.* 1822, p. 8).

Mar. sept.—In regione collina inter Tanger et Tetuan!

Species per Europam mediam et regionem totam Mediterraneam (inclusa Macaronesia) late diffusa est. De distributione varietatum ab auctoribus non rite definitis fusius disserere inutile duco.

CISTINEÆ (*Juss. Gen.* 249; *Spach, Ann. Sc. Nat.* ser. 2, vi. 357).

CISTUS (*L. Gen.* 673; *Willk. Ic. et Desc. Pl.* tab. 75 ad 109).

C. ALBIDUS (*L., DC. Pr.* i. 264; *Willk. l. c.* tab. 77).

Mar. sept.—In monte Beni Hosmar supra Tetuan! In rupibus prope Tetuan (1851)!

Ar. Geog. Regio Mediterranea occidentalis. Deest in Macaronesia. Hic et sequens *C. crispus* desunt in Græcia. Conf. *Boiss. Fl. Or.* i. 437.

C. CRISPUS (*L., DC. Pr.* i. 264; *Willk. l. c.* tab. 78).

Mar. sept.—Prope Tanger in monte Djebel Kebir! et alibi visus! (*Salzm. Exsicc*)!

Ar. Geog. Regio Mediterranea occidentalis (exclusa Macaronesia).

Ludit foliis breviter pubescentibus, vel (præsertim junioribus) longius villosis.

C. POLYMORPHUS (*Willk. l. c.* tab. 79–82),=C. vulgaris (*Spach, l. c.* pro parte). Forma genuina=C. villosus (*L., Sp. Pl.* 736? *et Lam. Dict.* ii. 12), cui ut synon. verisimiliter conjungendi sunt *C. pilosus*, L., et *C. incanus*, L., et *C. eriocephalus* (Viv. Cors. p. 8).

Mar. occid.—Djebel Hadid haud procul Mogador (*Rein et Fritsch, Spec. in hb. Kew.*)!

Mar. merid.—In collibus apricis sat frequens, et in regione inferiore Atlantis Majoris. Tasseremout! Distr. Reraya! In convalle Aït Mesan circ. 1300 m.! In rupibus pr. Seksaoua!

Ar. Geog. Regio Mediterranea omnis (exclusa Macaronesia); in peninsula Iberica minus frequens.

—— ——, var. CORSICUS (*Willk. l. c.* tab. 82).

Mar. merid.—Ad radices Atlantis Majoris prope Ourika legit G. Maw!

—— ——, var. CRETICUS (*Boiss. Fl. Or.* i. 437),=C. creticus (*L., DC. Pr.* i. 264).

Mar. occid.—In monte Djebel Hadid haud procul Mogador!

Ar. Geog. Regio Mediterranea præsertim orientalis. Hæc. var. deest, ut videtur, in peninsula Iberica.

Nomen Spachianum (*C. vulgaris*) antiquius foret, sed cl. auctor cum formis plurimis *C. polymorphi* etiam *C. albidum* et *C. crispum* in unam speciem comprehendit. Hæ novissimæ mihi videntur species probe distinctæ nec transitum unquam observavi. Nomen Willkommianum nobis ideo præferendum. Pace cel. Boissier *C. villosus*, L., est nomen nimis incertum, et ab ipso Linnæo pro parte minima catervæ formarum affinium sine nota diagnostica idonea propositum, et speciem collectivam indicare nequit.

Formam in Djebel Hadid lectam non sine dubio sub. var. *cretico*, Boiss., enumeravi. Habet folia minora magis rotundata, valde rugosa, et nisi in calyce desunt pili longiores.

CISTUS MONSPELIENSIS (*L., DC. Pr.* i. 265).
Mar. sept.—Tanger (*Schsb. spec.*)! (*Webb Herb.*)! In regione collina inter Tanger et Tetuan! Inter Tetuan et Ceuta!
Mar. merid.—Ad radices Atlantis Majoris prope Tasseremout!
Ar. Geog. Regio Mediterranea præsertim occidentalis (inclusa Macaronesia). Nisi in Græcia et in insulis Cypro et Creta deest in Oriente.

C. SALVIÆFOLIUS (*L., DC. Pr.* i. 265).
Mar. sept.—Sat frequens in ditione Tingitana. Prope Tanger! Prope Tetuan! "In fruticetis totius imperii" (*Schsb. in herb.*) Schousboe tamen nonnisi ditionem Tingitanam et provinc. meridionalium partem minimam cognovit.
Mar. occid.—Mogador (*Lowe Cat.*). Prope Aïn el Hadjar haud procul Mogador!
Ar. Geog. Regio Mediterranea tota (exclusa Macaronesia).

—— ——, var. β, MACROCALYX (*Willk. Ic. et Descr. Pl.* ii. 38. tab. 92).
Mar. occid.—In monte Djebel Hadid!
Mar. merid.—In regione inferiore Atlantis Majoris in convalle Aït Mesan usque 1200 m.!

C. POPULIFOLIUS (*L., DC. Pr.* i. 266).
Mar. sept.—In monte Djebel Kebir prope Tanger! (*Salzm. Exsicc.*)! (*Schsb. spec.*)!
Ar. Geog. Peninsula Iberica, adjecta Gallia Narbonensi finitima, et ditione Tingitana.

C. LADANIFERUS (*L., DC. Pr.* i. 266).
Mar. sept.—In monte Djebel Kebir prope Tanger! (*Salzm. Ezsicc.*)!
Var. vel lusus petalis immaculatis.
Ar. Geog. Peninsula Iberica, cum ditione Tingitana et Gallia Mediterranea finitima.

HELIANTHEMUM (*Pers. Syn.* ii. 75.)

H. LIBANOTIS (*L.*, sub *Cisto*; *Willd. Enum.* 570; *DC. Pr.* i. 267, *non* Cistus Libanotis, *Lam.*, *nec Dsf.*), = Halimium rosmarinifolium (*Spach, Ann. Sc. Nat.* ser. 2, vi.).
Mar. sept.—Prope Cap Spartel!
Ar. Geog. Peninsula Iberica et ditio Tingitana. Forsan etiam in Sicilia.
Olim inter auctores sententiæ diversæ de vero *C. Libanotide*, L.; hodie tamen omnibus notum est hoc esse cum stirpe Linnæana genuina identicum. Nomen triviale igitur nullomodo mutandum, et nomen *rosmarinifolium* (hodie pro sp. Americana Purshiana vindicatum)

verisimiliter ad *Cistum fastigiatum* (Guss. Pr. Fl. Sic. ii. 13) meliore jure spectat. An stirps Gussoniana a nostro *H. Libanotide* probe diversa sit mihi adhuc incertum est.

HELIANTHEMUM UMBELLATUM (*Mill. Dict.* No. 5 ; *DC. Pr.* i. 267), var. VERTICILLATUM,=Cistus verticillatus, *Brot.*

Mar. sept.—In collibus saxosis prope Tetuan !

Ar. Geog. Gallia media et meridionalis. Græcia. Peninsula Iberica. Marocco Tingitanus. Legi formam arcte affinem in Libano; conf. *Boiss. Fl. Or.* i. 439.

Specimina Gallica plurima quæ vidi inflorescentiam terminalem nec verticillatam ostendunt.

H. HALIMIFOLIUM (*L.*, sub *Cisto* ; *Willd. Enum.* 569 ; *DC. Pr.* i. 268), =Halimium lepidotum (*Spach, l. c.*).

Mar. sept.—Tanger (*Webb Herb.*) ! In saxosis prope Tetuan !

Mar. occid.—In parte superiore montis Djebel Hadid ! In sylva *Callitris quadrivalvis* et alibi prope Mogador, et inde versus Aïn el Hadjar !

Ar. Geog. Europa Mediterranea occidentalis, ex Italia usque Lusitaniam. Africa borealis. Deest in Macaronesia.

—— ——, var. SEPALIS STELLATO-TOMENTOSIS,=H. multiflorum (*Salzm. Exsicc.*; *Willk. Ic. et Descr.* ii. 67, tab. 108).

Mar. sept.—Ex fruticetis et aridis regionis Tingitanæ (*Schsb. spec.*) benevole comm. cel. Cosson. (*Salzm. Exsicc.* !) In monte Djebel Kebir ! (*Webb Herb.*) !

—— ——, var. LASIO-CALYCINUM,=H. lasio-calycinum (*Boiss. et Reut., Diagn. Pl. Or.* ser. 2, i. 50),= H. hirsutissimum (*Willk. l. c.* tab. 106).

Mar. sept.—In monte Djebel Kebir prope Tanger ! (*Boiss. et Reut. l. c.*).

H. multiflorum et *H. lasiocalycinum* certo certius ad varietates *H. halimifolii* reducenda, notis nullis stabilibus distinguendas. *H. multiflorum* sæpe, sed non semper, foliis minoribus præditum, gaudet sepalis ex pilis longiuscule stellatim ramosis dense obtectis. Folia in hoc uninervia, in *H. halimifolio* obsolete trinervia dicuntur, sed discrimen omnino fallax et minime constans. In hac specie, ut fit in *Cistis* plurimis, indumentum variabile. In *H. lasiocalycino* folia et sepala pilis longis subvillosis plus minusve vestita, et indumentum stellatum fit rarius. Specimina nostra fere intermedia sunt sed propiora *H. lasiocalycino*. Nomen hujus formæ, vix pro varietate enumerandæ, cl. Willk. perperam mutavit.

H. TUBERARIA (*L.*, sub *Cisto* ; *Mill. Dict.* No. 10 ; *DC. Pr.* i. 270).

Mar. sept.—Tanger (*Salzm. Exsicc.*) ! (*Webb Herb.*) ! Djebel Kebir prope Tanger ! Cap Spartel ! Prope Tetuan !

Ar. Geog. Per regionem Mediterraneam occidentalem ex Dalmatia usque Macaronesiam diffusum. In Græcia verisimiliter errore indicatum ex Boiss. Fl. Or. i. 440.

HELIANTHEMUM GUTTATUM (*L.*, sub *Cisto*; *Mill. Dict.* No. 18; *DC. Pr.* i. 270).

Mar. sept.—Tanger (*Salzm. Exsicc.*)! Djebel Kebir prope Tanger! Cap. Spartel!

Mar. occid.—Casa Blanca!

Ar. Geog. Regio Mediterranea a Syria usque Macaronesiam. Gallia occidentalis. Forma arcte affinis in Anglia.

—— ——, var. MACROSEPALUM (*Coss. Pl. Crit.* 29),=H. macrosepalum (*Salzm. Exsicc.*),=Tuberaria macrosepala (*Willk.*, *l. c.* tab. 117).

Mar. sept.—Tanger (*Salzm. Exsicc.*)! (*Webb Herb.*)! Spec. ex herb. Schousboe (sub *Cisto glanduloso*, Schsb.) "in fruticetis pr. Tanger," lectum benevole comm. cel. Cosson. Djebel Kebir! (*Reut.*). Tetuan (1851)!

Legi etiam prope San Roque haud procul Gibraltar!

—— ——, var. INCONSPICUUM,=H. inconspicuum (*Thib. in Pers. Syn.* ii. 77; *DC. Pr.* i. 271).

Mar. sept.—Prope Tanger legit *J. D. H.* spec. Hispanicis omnino conforme!

Ar. Geog. Tam hæc quam var. *macrosepalum* in peninsula Iberica et in ditione Tingitana obviæ sunt.

Hæc est inter typum et formam pro specie nova in Boiss. et Reut. Pug. p. 13, propositam, sub nom. *H. brevipes*, varietas intermedia. Characteres in hoc grege ex præsentia vel defectu stipularum, ex pilis longis plus minusve frequentibus, ex longitudine pedicellorum et magnitudine petalorum et sepalorum valde ludibundi et ideo fallaces.

H. NILOTICUM (*L.*, sub *Cisto*; *Pers. Syn.* ii. 78; *DC. Pr.* i. 272).

Mar. sept.—Tanger (*Webb Herb.*)! Inter Tanger et Tetuan!

Mar. occid.—Casa Blanca! Prov. Haha prope Mogador!

Mar. merid.—Prov. Shedma! Mesfioua! Tasseremout! Milhain!

Ar. Geog. Regio Mediterranea tota (inclusa Macaronesia).

—— ——, var. MICROCARPUM (*Coss. in Bourg. Pl. Hisp.*; *Boiss. Fl. Or.* i. 441).

Mar. merid.—In saxosis aridis regionis inferioris. Prov. Shedma prope Aïn Oumast! Mskala! et alibi.

Ar. Geog. Varietas per reg. omnem Mediterraneam diffusa.

—— ——, var.? PUMILUM.

Mar. merid.—In reg. subalpina Atlantis Majoris supra Arround legi exemplaria duo 2–3-pollicaria deflorata, foliis superioribus et sepalis tomentoso-hirtis, racemo contracto, capsula fere typica sed multo minore, seminibus angularibus omnino lævibus. Verisimiliter est hujus speciei polymorphæ forma nana.

Utrum *Cistus ledifolius*, L., Sp. 742, foret synonymon *C. nilotici*, sive melius ad var. *microcarpum* referri debet non satis eminet. Nomen specificum ab auctoribus posterioribus confusum hodie negligendum.

Helianthemum papillare (*Boiss. Voy. Esp.* ii. 63, tab. 14).

Mar. merid.—In saxosis aridis supra Seksaoua !

Ar. Geog. Peninsula Iberica; Africa boreali-occidentalis.

H. ÆGYPTIACUM (*L.*, sub *Cisto*; *Mill. Dict.* No. 23; *DC. Pr.* i. 273).

Mar. occid.—Legi prope Casa Blanca specimen exsiccatum sed satis certum !

Ar. Geoy. Per regionem Mediterraneam calidiorem (exclusa Macaronesia) diffusa. Deest in Græcia, Dalmatia et in Gallia Mediterranea.

H. LIPPII (*L.*, sub *Cisto*; *Pers.* ii. 78; *DC. Pr.* i. 273). Var *a* (*Boiss. Fl. Or.* i. 443),=Cistus ellipticus (*Desf. Fl. Atl.* i. 418, tab. 107),= H. rosmarinifolium, *Psl. Symb.* tab. 21.

Mar. occid.—In monte Djebel Hadid specimen unicum legi ! Ex spec. in Oasi Akka lecto (*Coll. Indig. Mardochæus*) frustulum benevole comm. Cosson.

In herb. Kew. conservatur specimen a cll. Rein et Fritsch in Marocco (verisimiliter in ditione Mogadorensi) lectum; a nostro parum differt floribus et capsulis aliquid majoribus et sepalis longius villosis.

Ar. Geog. Oriens. Africa borealis. Sicilia.

H. CANARIENSE (*Jacq. Ic. Rar.* i. tab. 97, sub *Cisto*; *Pers. Syn.* ii. 78, *DC. Pr.* i. 274).

Mar. occid.—Legimus prope Mogador ! et Aïn el Hadjar ! et in monte Djebel Hadid ! et iterum legi in litore Atlantico ab urbi Saffi meridiem versus !

Ar. Geog. Species propria insularum Canariensium et terræ continentalis proximæ.

Nisi herba densius incana spec. nostra Canariensibus omnino conformia.

H. RUBELLUM (*Psl. Del. Prag.* 25; *Boiss. Voy. Esp.*),=H. rotundifolium (*Dun. in DC. Pr.* i. 277),=Cistus nummularius (*Cav. Ic.* tab. 142; *Dsf. Fl. Atl.* i. 423, *non L.*).

Mar. merid.— In regione media Atlantis Majoris. In convalle Amsmiz 1200–1600 m. !

Ar. Geog. Hispania; Africa boreali-occidentalis; Sicilia, et forma arcte affinis (*H. Hymettium*, Boiss. et Heldr.) in Græcia.

Specimina nostra gaudent foliis oblongo-ellipticis acutiusculis, et sistunt transitum in *H. Hymettium*, quod nobis mera varietas videtur.

H. LAVANDULÆFOLIUM (*Lam. Dict.* ii. 25, sub *Cisto*; *DC. Fl. Fr.* iv. 820, *et Prod.* i. 278).

Mar. occid.—Ab urbe Mogador septentrionem versus ! In monte Djebel Hadid ! Inter Mogador et Shedma (*G. Maw spec.*) ! Agadir (*Coll. Indig.* 1871) !

Ar. Geog. Peninsula Iberica. Gallia Mediterranea et Corsica. Oriens. Africa boreali-occidentalis. Deest in Italia, Dalmatia, Africa boreali-orientali et in Macaronesia. Fere semper in regione litorali occurrit.

H. Broussonnetii, species Canariensis ex scheda in herb. Bouchet prope Mogador indicata, verisimiliter ad floram Maroccanam non pertinet. Broussonnet plantas patriæ diversæ in herbario sæpe miscuit, et hæc pulchra stirps in agro Mogadorensi nemini recentiorum obvia fuit.

HELIANTHEMUM GLAUCUM (*Cav. Ic.* iii. 31, tab. 261, *non Desf.*, sub *Cisto*; *Pers. Syn.* ii. 78; *DC. Pr.* i. 279).

Mar. merid.—In convalle Amsmiz circa 1400 m.!

Specimina nostra Hispanicis omnino conformia nisi statura minore. Ludit petalis albis ut fit in spec. Bourgæanis, No. 1074, Pl. d'Espagne.

—— ——, var. STŒCHADIFOLIUM, = H. stœchadifolium (*Brot. Fl. Lus.* ii. 270, sub *Cisto*; *DC. Pr.* i. 279).

Mar. merid.—In rupibus supra Seksaoua!

Distinguitur foliis superioribus insigniter revolutis et ramis abortivis in axillis foliorum ad fasciculos foliorum juniorum reductis, unde affinitas aliqua, ut jam innotuit Brotero *l. c.*, cum *H. lavandulæfolio.*

Specimina Maroccanis simillima legi olim prope Malaga. Petala vidi semper lutea.

Ar. Geog. H. glaucum, per regionem Mediterraneam occidentalem late diffusum, in Macaronesia deest. Est stirps valde ludibunda, cujus limites ægre definiendi.

H. VIRGATUM (*Desf. Fl. Atl.* i. 432, sub *Cisto*; *Pers. Syn.* ii. 79; *DC. Pr.* i. 282. Inclusis *H. racemosum* (Lam. Dict. ii. 25, sub *Cisto*; Dun. in DC. Pr. i. 281), et *H. pilosum* (Pers. Syn. ii. 79; DC. Pr. i. 282, an L., sub *Cisto*).

Mar. merid.—Frequens ad radices Atlantis Majoris et in convallibus calidioribus. Tasseremout! Ourika! Reraya! Aït Mesan usque 1400 m.! Sektana! Amsmiz! Milhain! Ex Prov. Mtuga (*R. et Fr. spec. in herb. Kew.*)!

Notæ diagnosticæ quibus *H. racemosum* et *H. pilosum* ab *H. virgato* separantur sunt adeo instabiles et ludibundæ ut ne quidem varietates sistunt. Si verbis auctorum hæremus calyx in *H. virgato* cano-pulverulentus pubescens, in *H. piloso* nervoso-striatus pilosiusculus, in *H. racemoso* nervoso-sulcatus violaceo-rufescens. In ditione nostra calyces sæpius subglaberrimi, rarius tenuiter incano-pubescentes, vel pilosiusculi, folia angusta, plus minusve margine revoluta, in pagina superiore viridia vel subincana, subtus stellato-tomentosa. In speciminibus Hispanicis et Algeriensibus *H. pilosi* video calyces valde variabiles ut in spec. nostris. Petala ludunt alba vel pallide rosea.

—— ——, var. STRICTUM, = H. strictum (*Cav. Ic.* iii. 32, tab. 263, sub *Cisto*; *Pers. Syn.* ii. 79; *DC. Pr.* i. 281), = H. virgatum, var. Maroccanum, *nob. MSS.*

Mar. merid.—Valde frequens in saxosis aridis regionis inferioris et rarius in convallibus Atlantis Majoris. Legimus in Prov. Shedma prope Aïn Oumast! in glareosis torrentis Ourika! prope Seksaoua! et in convalle Aït Mesan! In convalle Amsmiz legi varietatem seu lusum calyce piloso, sepalis exterioribus longioribus et acutioribus, stipulis pariter longioribus foliorum dimidiam longitudinem subæquantibus. Petala ex albo pallide rosea.

Ar. Geog. Peninsula Iberica. Africa boreali-occidentalis.

Affinitas inter *H. virgatum* et *H. apenninum* (quocum velut synonyma enumeranda sunt *H. pulverulentum*, DC., *H. polifolium*, DC., et plurimæ species ab auctoribus enumeratæ) tam arcta est ut vix pro typis specificis probe distinctis haberentur.

FUMANA (*Spach, Ann. Sc. Nat.* ser. 2, vi. 359).

Genus *Fumana* staminibus exterioribus sterilibus moniliformibus, seminibus anatropis raphe præditis, facile recognoscendum, et præterea habitu proprio (in *F. glutinoso* minus eminente) gaudens, a celebb. Benth. et H. f. in Gen. Pl. 114, ad subgenus *Helianthemi* reductum est. Pace tantorum virorum vestigia auctorum recentiorum qui hoc (eodem jurequo *Callianthemum* et plurima genera subnaturalia) nomine proprio salutarunt secuti sumus.

F. GLUTINOSA (*L.*, sub *Cisto*; *Pers. Syn.* ii. 79, *et DC. Pr.* i. 276, sub *Helianthemo*; *Boiss. Fl. Or.* i. 449), = F. viscida (*Spach, loc. cit.*).

Mar. sept.—Tanger (*Schsb. spec. sub* C. Fumana)! (*Webb Herb.*)! In rupibus prope Tetuan 1851, et iterum 1871!

Mar. occid.—Mogador (*Lowe*)! Ain el Hadjar! Djebel Hadid!

Mar. merid.—Sat frequens ad radices Atlantis Majoris et in convallibus calidioribus. Mesfioua! Ourika! Aït Mesan usque 1400 m.! Seksaoua! Amsmiz!

Ar. Geog. Regio Mediterranea omnis (exclusa Macaronesia).

—— ——, var. **VIRIDIS**, = Helianthemum viride (*Ten. Pr. Fl. Neap.* p. 31).

Mar. sept.—In rupibus prope Cap. Spartel! Inter Tanger et Tetuan! In monte Beni Hosmar supra Tetuan!

Optimo consilio cl. Spach plurimas s. d. species nullis notis stabilibus dignoscendas in unam reduxit, sed minus bene nomen triviale Linnænum antiquius et satis aptum mutavit. Verum est in var. *viridi* folia sæpius subglaberrima, laxiora et longiora quam in typo; sed pedicelli semper plus minusve glanduloso-viscidi, et formæ intermediæ non desunt. Specimina Schousbœana Tingitana quæ benevolentiæ cel. Cosson debeo inter typum et genuinum *H. viride*, Ten. transitum præbent.

FUMANA LÆVIPES (*L.*, sub *Cisto*; *Pers. Syn.* ii. 76, *et DC. Pr.* i. 275, sub *Helianthemo*; *Spach, loc. cit.*).

Mar. sept.—Tetuan! (*Webb Herb.*)! In monte Beni Hosmar!

Mar. merid.—In rupibus supra Seksaoua!
Ar. Geog. Regio Mediterranea occidentalis (exclusa Macaronesia).

F. CALYCINA, *Clauson*, = F. arbuscula (*Ball, Journ. Bot.* 1873, 300) = Fumana Spachii, var. calycina (*Coss. Index Pl. Mar.* 14).

Frutex humilis, ramosissimus, intricatus, trunco demum diametro pollicari; ramuli recti, rigidi, foliacei; folia alterna, coriacea, infima ovalia, vix lineam longa, superiora ovali-oblonga circa 3 lineas attingentia, suprema brevissima, cum ramulis junioribus puberula; flores in quovis ramulo pauci (2–4); pedicelli subpollicares, demum recurvati; sepala exteriora (epicalyx) brevia, linearia, scabrida, interiora membranacea, carnea, ex costis 3 viridibus hirtulis et nervo 1 utrinque non costato lineata; petala (nondum expansa) calyci æquilonga, saturate flava; semina maxima, in quavis capsula sex, pallida, lævia, oculo armato minute granulata.

Mar. merid.—In regione inferiore Atlantis Majoris admodum rara. Exemplaria duo, jam deflorata, legimus in glareosis ad torrentem Ourika (circ. 1000 m.)! et alterum, nondum florens, in convalle Aït Mesan (circ. 1300 m.)!

Semina illis *F. vulgaris* ter quaterve longiora et latiora. Planta Atlantica a nobis visa multo major est quam spec. quæ postea vidi in herb. Cosson, et mihi a *F. Spachii* Europæa omnino diversa visa est. Melius edoctus ex spec. intermediis Algeriensibus nuper scrutatis hodie hæc stirps insignis sicut subspecies *F. Spachii* enumeranda mihi videtur. Monente cel. Cosson *F. calycinam* legit Balansa in sylva *Callitris* haud procul Mogador. Nascitur etiam in Algeria.

VIOLARIEÆ (*DC. Fl. Fr.* IV. 801).

VIOLA (*L. Gen.* 1007).

V. ODORATA (*L.*, *DC. Pr.* i. 296).

Mar. sept.—Tanger (*Webb Herb.*)! Tetuan (*G. Maw*)!
Mar. merid.—In umbrosis irrigatis urbis Marocco!
Ar. Geog. Europa media. Regio Mediterranea tota (inclusa Macaronesia). Sibiria. Forma orientalis montana *V. suavis*, M. B.; a typo aliquid recedit, sed sicut varietas a cel. Boissier (Fl. Or. i. 458) enumeratur. Specimina nostra ex urbe Marocco carent flore et fructu; forsan referunt varietatem *maderensis* (Lowe, Man. Fl. Mad.).

V. ARBORESCENS (*L.*, *DC. Pr.* i. 299), = V. suberosa (*Desf. Fl. Atl.* ii. 313).

Mar. sept.—Tanger (*Schsb. spec.*)! In rupibus maritimis haud procul Cap. Spartel! In rupibus calcareis prope Tetuan! In monte Beni Hosmar supra Tetuan (exemplaria pulcherrima sesquipedalia et ultra)!

Mar. occid.—Secus rivulum Oued Kseb prope Mogador! ubi eam jam legerat Balansa. In monte Djebel Hadid!

Ar. Geog. Regio Mediterranea occidentalis (exclusa Macaronesia); prædiligit rupes zonæ sublitoralis.

Ludit foliis latioribus angustioribusve, margine integerrimis vel denticulatis vel serratis, sed hæ notæ nimis inconstantes et veras varietates non sistunt. Confer DC. Prod. l. c.

VIOLA TEZENSIS, *nob.*, = V. modesta (*Ball in Journ. Bot.* 1873, 300; *non Fzl. Ill. Pl. Taur.* p. 41).

E grege *V. tricoloris*, L., et verisimiliter juxta *V. Heldreichianam*, Boiss. collocanda, sed notis plurimis distincta. Folia inferiora ovata, superiora lanceolata in petiolum attenuata, profunde crenata vel crenato-dentata, præsertim margine et nervo medio hirtula. Stipulæ *V. Heldreichianæ*, oblongo-lineares, integræ vel basi externa lacinula auctæ, foliis breviores. Pedicelli glaberrimi, apicem versus bibracteolati. Sepala viridia, oblonga, margine ciliolata, cæterum glabra. Petala calycem vix æquantia. Calcar brevissimum.

Mar. merid.—Exemplar unicum in monte Djebel Tezah alt. circiter 2400 m. detexi!

POLYGALEÆ (*Juss. Ann. Mus.* xiv. 386).

POLYGALA (*L. Gen.* 851).

P. RUPESTRIS (*Pourr. Act. Toul.* iii. 325), = P. saxatilis (*Desf. Fl. Atl.* ii. 128, tab. 175; *DC. Pr.* i. 324).

Mar. occid.—Aïn el Hadjar!

Mar. merid.—In regione inferiore et media Atlantis Majoris, et rarius in planitie. In convalle Aït Mesan 1400–1800 m.! In convalle Amsmiz circ. 1500 m.! In monte Djebel Tezah circ. 1800 m.! Ex prov. Shedma specimen retulerunt cll. Rein et Fritsch!

Ar. Geog. Regio Mediterranea occidentalis (exclusa Macaronesia).

P. ROSEA (*Desf. Fl. Atl.* ii. 128, tab. 176; *DC. Pr.* i. 324), = P. Preslii (*Spreng. Syst. Veg.* v. 531) = P. nicæensis (*Risso ex Koch, Syn.* i. 98).

Mar. sept.—Pr. Tanger in monte Djebel Kebir versus Cap. Spartel! In rupibus prope Tetuan! In monte Beni Hosmar! ubi eam jam legerat P. B. Webb.

Ar. Geog. Per regionem Mediterraneam, imprimis occidentalem, late diffusa. Deest in Macaronesia, sed insulas Azoricas incolit.

Icon Fontanesiana supra citata minus bona, sed de identitate stirpis vix dubitandum. Confer tamen Boissier, Fl. Or. i. 475.

P. MONSPELIACA (*L., DC. Pr.* i. 325).

Mar. sept.—In regione collina prope Fondak, inter Tanger et Tetuan!

Ar. Geog. Regio Mediterranea omnis (exclusa Macaronesia), sed potius infrequens.

POLYGALA WEBBIANA (*Coss. in Bull. Soc. Bot. Fr.* xx. 240).

Descriptionem cel. auctoris præferre juvat.

"Planta perennis, ut videtur a basi ramosa, *ramis* diffusis, *teretiusculis*, inferne denudatis pulvinis foliorum delapsorum tuberculatis, superne dense foliosis, pilis arcuato-ascendentibus *dense pubescentibus*. *Folia* eodem modo ac rami sed parcius pubescentia, oblonga, plana, in petiolum contracta, acutiuscula vel inferiora obtusa *haud mucronata*. *Flores* majusculi, in axillis foliorum superiorum *in racemos* brevissimos cymiformes *2–3-floros vel sæpissime abortu unifloros dispositi*, bracteolis 3 membranaceis obovatis amplis deciduis ad basim pedicelli involucrum efformantibus suffulti. *Sepala* omnia *citius decidua*, glabrescentia, 3 *exteriora* albida membranacea vix herbacea *quorum superius* majus *fornicatum subsaccatum* et duo inferiora planiuscula ovata, 2 interiora petaloidea alba vel pallide purpurascentia corollam subæquantia obovata obtusa inferne angustata. *Petala* 3, inter se et cum vagina staminali ad tertiam partem superiorem in tubum superne fissum coalita, duorum lateralium limbo inæquilatero concavo-subcarinato pallide purpurascente apice obtuso, *inferioris limbo* æquilatero concavo-carinato genitalia amplectente apice truncato *in carina* procul ab apice *crista* purpurascente *in lobos* nonnullos *oblongos latiusculos haud incrassatos divisa donato* superne pallide lutescente. Ovarium superne basi glandula stipatum. *Capsula* (immatura tantum visa) membranaceo-carnosula, a latere compressa, *obovata*, apice marginata."

Mar. sept.—Florentem legimus in monte Beni Hosmar supra Tetuan ubi eam olim legit P. B. Webb!; et iterum spec. 2 detexi in rupibus juxta urbem Tetuan! In monte Djebel Moussa supra fretum Herculis eminente legit cl. Blackmore.

Monente cel. Cosson:—"*P. Webbiana*, floribus magnis, in racemos axillares 1–3-floros dispositis, sepalis deciduis, superiore fornicato subsaccato, crista carinali petali inferioris parce et grosse lobata, ad sectionem *Chamæbuxus* pertinet.—A *P. Munbyana* (Boiss. et Reut. 'Diagn. Pl. Or.' ser. 2, v. 50) differt ramis teretiusculis, non acute angulatis, dense pubescentibus, non glabrescentibus, foliis haud mucronatis, petalis lateralibus haud truncato-obtusis.—A *P. Chamæbuxo*, L., cui valde affinis, distincta indumento ramorum densiore, foliis minus coriaceis haud mucronatis, petalis lateralibus haud truncato-obtusis, lobis cristæ tenuibus planiusculis, non incrassatis subcorculatis."

Facie simillima est *P. Chamæbuxo*, var. *rhodopteræ*, stirpi Alpium Venetarum solenni, sed in hac, præter notas supra indicatas. sepala interiora saturate purpureo-rosea, petala lateralia apice lutescentia; dum in *P. Webbiana*, sepala interiora in viva pallide purpurascentia, petala lateralia læte purpureo-rosea. Folia in *P. Chamæbuxo* longiora, angustiora, nec sensim in petiolum attenuata.

P. Chamæbuxus est Alpium Europæ (latiore sensu) incola, unde in ericetis Bavariæ et per Pannoniam usque Transsylvaniam, necnon per Apenninum Liguriæ in Alpes Apuanas se protendit. Deest in peninsula Iberica et in Pyrenæis et in Europa austro-orientali. Localitas in ducatu Lucemburgensi verisimiliter spuria.

POLYGALA BALANSÆ (*Coss. in Bal. Pl. Maroc.* 1867, *et in Bull. Soc. Bot. Fr.* xx. 240).

Sequitur descriptio Cossoniana:—"*Frutex* erectus, multicaulis, dumosus, divaricatim ramosus, *ramis* rigidis *spinescentibus*, pulvinis foliorum delapsorum tuberculatus, sub lente punctato-puberulus. *Folia parva*, oblongo-linearia, concavo, *cito decidua*. *Racemi* breves, 3–4-flori, *sæpius abortu* 1–2-*flori*. *Sepala* omnia *citius decidua*, glabrescentia, 3 *exteriora* subherbacea margine purpurea, *quorum superius fornicatum subsaccatum* et duo inferiora planiuscula ovata; 2 interiora petaloidea purpurea corollam subæquantia ovata, inferne angustata, superne margine involuto apiculata. *Petala* 3, inter se et cum vagina staminali ad quartam partem superiorem in tubum superne fissum coalita, duorum lateralium limbo inæquilatero concavo-carinato pallide purpureo; *inferioris limbo* latiore æquilatero concavo-carinato genitalia amplectente, apice emarginato, *in carina* infra apicem *crista indivisa* irregulariter plicata *donato*, superne luteo. Ovarium superne basi glandula stipatum. *Capsula* membranaceo-carnosula, a latere compressa, *suborbiculata, apice vix retusa*, angusta, marginata, *venis concentricis* parce ramosis *donata*. Semen nigrescens, pilosum, caruncula triloba lobis lateralibus seminis quartam partem inferiorem attingentibus."

Mar. merid.—Species per clivum septentrionalem Atlantis Majoris hucusque exploratum in saxosis aridis et rupestribus usque 1800 m. s. m. frequentissima. Primus eam detexit cl. Balansa anno 1867. Legimus pr. Tasseremout! Ourika! Seksaoua! In convallibus Aït Mesan! Amsmiz! et alibi vidimus.

Stirps insignis sæpe 6–8-pedalis. Ramis teretibus apice spinescentibus *Spartium scoparium* interdum refert.

Individua minora habitu et facie stirpem Sinaiticam *P. spinescens*, Decaisne, miro modo simulant etsi characteres valde diversi. Species nostra structura floris et fructus ad sectionem *Chamæbuxus* pertinet.

FRANKENIACEÆ (*St.-Hil. Mém. Plac. Cent.* p. 39).

FRANKENIA (*L. Gen.* 445).

F. PULVERULENTA (*L., DC. Pr.* i. 349).

Mar. occid.—Casa Blanca! Mogador!

Mar. merid.—In saxosis aridis Seksaoua!

Ar. Geog. Regio Mediterranea omnis inclusa Macaronesia. Senegalia. Songaria. Olim in Anglia meridionali.

FRANKENIA HIRSUTA (*L., Boiss. Fl. Or.* i. 780; *Schousb. Gew. Marok,* 168). Inclusis *F. lævis* (L., DC. Pr. i. 349; Schousb. Gew. Marok. 167) et *F. intermedia* (DC. eodem loco).

Mar. sept.—Tanger specimen (cui scheda *F. lævis,* L.) ex herb. Schousboe benevole communicavit cel. Cosson! et eandem formam, foliis basi ciliolatis cæterum glaberrimis, legimus prope Cap. Spartel! et prope Tetuan legit Webb! Formam foliis tenuiter tomentellis legi prope Tetuan anno 1851!

Mar. occid.—Casa Blanca in litore Atlantico, formam foliis subtomentellis! et eandem legimus prope Mazagan! Mogador (*Schsb. l. c.*).

Optimo consilio cel. Boissier, *l. c., Frankenias* fere omnes perennes regionis Mediterraneæ sub *F. hirsuta,* L., reduxit. Pace tanti viri varietates *α* et *β* sola præsentia vel absentia tomenti tenuissimi innixas separare nequeo, dum in eodem loco specimina utriusque formæ semel crescunt. Formas sequentes a typo remotiores pro speciebus rite distinctis habuerim, sed characteres nimis instabiles sunt et formæ intermediæ non desunt.

Ar. Geog. F. hirsuta, L., sensu latiore est species late diffusa per oras Atlanticas Europæ et Africæ, ex Britannia ad Cap. Bon. Spei, et per totam regionem Mediterraneam. In Europa media deest, sed terras continentales Asiæ temperatæ non fugit.

—— ——, var. VELUTINA, *nob.*=F. velutina (*DC. Pr.* i. 350).

Stirps insignis differt ab affinibus statura majore, floribus majoribus pulchre roseis, herba tota velutino-canescente; sed specimina intermedia in litore Atlantico lecta hanc cum typo conjungunt.

Mar. occid.—Legimus in rupibus insulæ Mogador! verisimiliter eodem loco ubi eam primus detexit Broussonnet et postea legerunt Schousboe et Balansa. Specimina fere intermedia legimus inter hanc et *F. intermediam,* DC., prope Saffi! et pr. Casa Blanca!

—— ——, var. δ, REVOLUTA, *Boiss. l. c.,*=F. revoluta (*Forsk. Fl. Æg.-arab.* p. 75; *DC. Pr.* i. 350),=F. corymbosa (*Desf. Fl. Atl.* i. 315, tab. 93; *DC. Pr.* i. 350).

Mar. merid.—In planitie aridissima inter Aïn Oumast et Sheshaoua! et iterum prope Misra ben Kara!

Specimina nostra ludibunda. Nonnulla omnino similia spec. ex Ajanque prov. Murcia (*Bourgeau, Pl. d'Esp.* no. 2315), quæ *F. Webbii* (Boiss. et Reut. Pug. 16), et aliis a me olim lectis pr. Almeria et prope Chiclana. Alia propiora sunt *F. pallidæ* (Boiss. et Reut. Diagn. Pl. Or. ser. 2, i. 61), quæ mihi lusus levis nec vera varietas videtur.

F. thymifolia (Desf. Fl. Atl. i. 316; DC. Pr. i. 350) a Schousboe indicatur in arenosis maritimis prope Mogador (*Schousb. Gew. Marok.* 167); nos non vidimus et floræ nostræ videtur dubia civis. Hæc forsan velut subspecies enumeranda est. Facies sat singularis et characteres minus variabiles quam in affinibus. Hujus var. levis mihi videtur *F. Reuteri* (Boiss. Diagn. Pl. Or. ser. 2, i. 60).

CARYOPHYLLEÆ (*Juss. Gen.* 299).

VELEZIA (*L. Gen.* 447).

V. RIGIDA (*L.*, *DC. Pr.* i. 387).
Mar. occid.—Agadir (*Coll. Indig.* 1871)!
Ar. Geog. Regio Mediterranea omnis (exclusa Macaronesia).

DIANTHUS (*L. Gen.* 565).

D. ATTENUATUS (*Sm. Trans. Linn. Soc.* ii. 301; *DC. Pr.* i. 358),=D. lusitanus (*Brot. Fl. Lusit.* ii. 177).
Mar. merid.—In regione media et superiore Atlantis Majoris. In convalle Aït Mesan usque in jugo Tagherot a 1800 m. ad 3000 m.! Specimina ex montibus Djebel Ouensa et Djebel Afougueur (*Coll. Indig. Ibrahim*) benevole comm. cel. Cosson sub "*D. lusitanicus*, Brot."
Ar. Geog. Peninsula Iberica. Pyrenæi Orientales. Atlas Maroccanus.
D. lusitanus, a Brotero *loc. cit.* bene descriptus, est sæpius forma multicaulis, caulibus pluries furcatis, petalis profunde inciso-serratis basi pilosiusculis, dum stirps Pyrenaica (*D. attenuatus* typicus) habet ramos pauciores breviores 1–2-floros, petala crenata seu leviter dentata imberbia. Sed hæ notæ a solo et temperie pendent. Vidi ex Pyrenæis orientalibus specimina nullomodo a *D. lusitano* distinguenda. Nostra specimina ex convalle Aït Mesan potius ad formam vulgarem Pyrenaicam; contra quæ debeo humanitati cel. Cosson ad formam Lusitanicam propius accedunt.

D. VIRGINEUS (*L. Sp. Pl.* 590; *Gr. et God. Fl. Fr.* i. 238, *non DC. Pr.* i. 361).
Mar. sept.—? Specimen nondum florens legi in rupibus pr. Tetuan verisimiliter huc referendum!
Mar. merid.—In regione media Atlantis Majoris. In convalle Aït Mesan a 1600 m. ad 2000 m.! In monte Djebel Tezah spec. legit J. D. H.!
Ar. Geog. Europa media. Regio Mediterranea occidentalis (exclusa Macaronesia).

D. siculus (*Psl. Del. Prag.* p. 59; *Guss. Fl. Sic.* i. 479).
Mar. occid.—Inter Mogador et Aïn el Hadjar! In monte Djebel Hadid! (forma calycibus coloratis). Inter Mogador et Shedma, *G. Maw, sp.*! Agadir (*Coll. Indig.* 1871)!
Mar. merid.—In rupestribus supra Seksaoua! Ourika (*R. et Fr. spec. in herb. Kew.*)!
Ar. Geog. Regio Mediterranea occidentalis, imprimis in calidioribus. Genus omne deest in Macaronesia. Specimina classica Panormitana et

quæ legi in Hispania sunt omnia valde variabilia quoad calycem et squamas externas plus minusve elongatas, chartaceas vel herbaceas, et specimina ex ditione Mogadorensi non minus ludibunda sunt. Quæ legimus pr. Seksaoua propiora *D. virgineo*. An *D. siculus* pro varietate vel subspecie meliore jure enumerandus sit judicet monographus in hoc genere valde desideratus.

DIANTHUS GADITANUS (*Boiss. Diagn. Pl.Or.* ser. 2, i. 67), = D. Hornemanni (*Salzm. Exsic., non Ser. in DC. Pr.* i. 362), = D. Schousbœi (*Coss. MSS.*).

Mar. sept.—Tanger (*Schsb. herb.* sub "*D. glaucus*"), *Coss. spec.*! (*Salzm. Exsicc. in herb. Kew.*)! In monte Beni Hosmar supra Tetuan nondum florentia, sed verisimiliter huc referenda, specim. 2 legimus!

Ar. Geog. Hispania Gaditana et Marocco Tingitanus.

Affinis ut videtur *D. Liboschitziano*, Ser.

TUNICA (*Scop. Fl. Carn.* i. 300).

T. COMPRESSA (*Desf. Fl. Atl.* i. 343. tab. 97, *et DC. Pr.* i. 354, sub *Gypsophila; Fisch. et Mey. Ind. Sem.*).

Mar. merid.—Sat frequens in planitie et in calidioribus reg. inferioris Atlantis Majoris. Aïn Oumast! Mskala! Seksaoua! In convalle Amsmiz, circ. 1400 m.!

Ar. Geog. Africa boreali-occidentalis.

T. PROLIFERA (*L., et DC. Pr.* i. 355, sub *Diantho*; *Scop. Fl. Carn.* i. 300).

Mar. merid.—In regione media Atlantis Majoris. In convalle Aït Mesan circ. 1500 m.! In monte Djebel Tezah usque 2100 m.!

Ar. Geog. Europa media. Regio Mediterranea (inclusa Macaronesia), sed rara in calidioribus. Orientem versus vix ultra Byzantium se protendit.

SAPONARIA (*L. Gen.* 584).

S. VACCARIA (*L., DC. Pr.* i. 365).

Mar. merid.—In distr. Mesfioua haud procul urbem Marocco spec. unicum legit J. D. H.!

Ar. Geog. Europa media. Regio Mediterranea omnis (inclusa Macaronesia). In regionibus alienis, e. g. Sibiria Altaica et India orientali, verisimiliter cum seminibus introducta.

SILENE (*L. Gen.* 772; *Rohrbach, Monog. Sil.*).

S. INFLATA (*Sm. Fl. Brit.* ii. 292; *DC. Pr.* i. 368), = S. cucubalus (*Wib. Prim. Werth,* 241; *Rohrb. Sil.* 84).

Mar. sept.—Tanger! In monte Beni Hosmar pr. Tetuan! Prope Tetuan (1851)!

Mar. occid.—Casa Blanca! Agadir (*Coll. Indig.* 1871)!

Mar. merid.—Milhain! formam foliis angustioribus legimus in convalle Aït Mesan, alt. 1200–1600 m.!

Ar. Geog. Europa media et borealis. Regio Mediterranea omnis (inclusa Macaronesia). Asia temperata. India orientalis. In America boreali introducta.

—— ——, var. RUBRIFLORA, *nob.* Petalis brevissimis calycem vix excedentibus saturate rubellis.

Mar. sept.—In sepibus prope Tanger!

Nomen triviale ab omnibus fere botanicis receptum cl. Rohrbach infauste mutavit. Si solo antiquitatis jure legamur, *S. vulgaris* erit. Nomen *Behen vulgaris* (Mœnch. Meth.) est enim Wibeliano pluribus annis antiquius.

S. DISTICHA (*Willd. Enum.* 476; *Rohrb. Sil.* 96), = S. parvifolia (*Otth in DC. Pr.* i. 376, *non Zea, in Poir. Dict. Suppl.*).

Mar. sept.—Specimen ex herb. Schousboe in monte Djebel Kebir pr. Tanger lectum sub "*S. hirsuta*" Schsb. herb., benevole comm. Cosson.

Ar. Geog. Algeria. Ins. Baleares. Ditio Tingitana.

S. GALLICA (*L., DC. Pr.* i. 371; *Rohrb. Sil.* 96).

Mar. sept.—Tanger (*Salzm. Exsicc.*)! Cap. Spartel! Inter Tanger et Tetuan!

Mar. occid.—Casa Blanca!

—— ——, var. MINOR, magis pilosa, = S. sardoa, *Moris*.?

Mar. merid.—Mesfioua haud procul urbem Marocco!

Hæc est verisimiliter *S. lusitanica* (L. Sp. Pl. i. 416).

Ar. Geog. Species verisimiliter Europæ mediæ et australis indigena, per totam fere orbem introducta et facta spontanea; ex cœli et soli diversitate formæ plurimæ enatæ pro speciebus distinctis ab auctoribus descriptæ.

S. CERASTOIDES (*L., DC. Pr.* i. 372; *Rohrb. Sil.* 38), var. ANOMALA (*Ball, Journ. Bot.* 1873, 301).

Habitu et seminum structura typo omnino conformis, sed insigniter differt calyce subevenio, nervis in parte calycis superiore obscure anastomosantibus, et filamentis basi puberulis.

Mar. merid.—Prope Mzouda!

Forsan melius cognita pro specie diversa habenda.

Ar. Geog. Species per regionem Mediterraneam (exclusa Macaronesia) dispersa.

S. Giraldii (Guss. Fl. Inar. 36), quæ gaudet seminibus et calyce *S. gallicæ* et filamentis glabris *S. cerastoidis,* mihi videtur varietas prioris, nec cum *S. cerastoide* adsocianda.

S. TRIDENTATA (*Desf. Fl. Atl.* i. 349; *DC. Pr.* i. 371; *Rohrb. Sil.* 99).

Mar. merid.—Amsmiz ad radices Atlantis Majoris!

Ar. Geog. Africa boreali-occidentalis. Peninsula Iberica. Macaronesia.

Priori similis sed ut videtur bene distincta species, floribus subsessilibus, calyce ex nervis eminentibus eximie costato, fructifero ore contracto dentibus longis divergentibus, capsula subsessili globosa longe rostrata, nec, ut in *S. cerastoidi*, ovoidea carpophoro brevi falcrata et rostro brevi prædita.

SILENE NOCTURNA (*L., DC. Pr.* i. 372; *Rohrb. Sil.* 100).

Mar. merid.—Hinc inde in regione inferiore et in convallibus calidioribus Atlantis Majoris. In convalle Aït Mesan circ. 1300 m.! Prope Mzouda! Ourika (*R. et Ft. spec. in herb. Kew.*)! Seksaoua (*J. D. H.*)!

—— ——, β, PARVIFLORA (*Otth in DC. Pr. l. c.*),= var. micrantha (*Willk. Ic. et Desc.* i. 69, tab. 50),=var. γ, permixta (*Rohrb. l. c.*), =S. permixta (*Jord. Pug. Pl. Nov.* 32), =S. mutabilis (*L. Sp. Pl.* 596)?

Mar. merid.—Tasseremout!

Ar. Geog. Species per regionem Mediterraneam (inclusa Macaronesia) late diffusa. In America boreali advena.

Var. nostra e tvar. *brachypetala* (Rohrb. *l. c.*) verisimiliter per totam aream inveniendæ.

S. decipiens (*Ball in Journ. Bot.* 1873, 300).

Proxima *S. nocturnæ*, cui facie similis; differt tamen pedicellis parce glandulosis vix viscidulis, calyce fructifero ex nervis fusco-viridibus costato, dentibus erecto-patentibus capsulam superantibus, ejus diametrum æquantibus, petalis capsulam vix superantibus, lamina brevi atrorubente, seminibus minimis dorso vix canaliculatis.

Mar. occid.—Legimus in arenosis prope Casa Blanca!

Mar. merid.—Specimen incompletum sed cæteris plane conforme legi prope Amsmiz ad radices Atlantis, alt. circ. 1100 m.!

Stirps singularis calyce et seminibus a *S. nocturna* nimis diversa ut pro varietate haberetur.

S. OBTUSIFOLIA (*Willd. Enum.* p. 473; *DC. Pr.* i. 374; *Rohrb. Sil.* 102),=S. colorata (*Schousb.* ex *Horn. H. Hafn.* i. 412; *DC. Pr.* i. 374, *non Poir.*).

Mar. sept.—In arenosis pr. Tanger! In arenosis maritimis inter Tetuan et Ceuta!

Ar. Geog. Peninsula Iberica. Macaronesia. Africa boreali-occidentalis. Habitat etiam in Ægypto inferiore (*ex Boiss. Fl. Or.* i. 593).

S. HIRSUTA (*Lag. Var. de Cienc.* 1805, 212; *Rohrb. Sil.* 102, *non Poir. Voy.*),=S. hirsutissima (*Otth in DC. Pr.* i. 372), var. TUBERCULATA, *nob.*

Mar. sept.—In monte Djebel Kebir pr. Tanger die 13 Jun. 1871, florentem et fructiferam legi! Ex eodem monte specimina seminibus nondum maturis a b. Schousboe lecta (*S. pilosa*, Schsb. herb.) benevole communicavit cel. Cosson. Eandem varietatem, nisi fallor, sistit *S. hispida*, Salzm. Exsicc. Tingitana.

Mar. occid.—Specimina jam deflorata legi prope Casa Blanca (Apr. 22, 1871) seminibus spec. nostris Tingitanis omnino conformibus.

Hæc varietas speciminibus typicis *S. hirsutæ* quæ in Hispania legi et pluries habui omnino conformis est, nisi seminibus dorso et præsertim margine tuberculatis, facie paululum depressis nullomodo excavatis. Speciminibus plurimis Hispanicis accurate scrutatis transitum nullum detexi; demum specimen *S. hirsutæ* prope Malaga a Rambur lectum semina nostris valde accedentia mihi præbuit. Semina in genere *Silene* notas optimas diagnosticas inter species affines præbuerunt, sed *vis variativa* naturæ, vitæ socia inseparabilis, etiam in seminum structura se palam facit.

Utrum *S. hirsuta*, Lag., a *S. vespertina* (Retz. Obs. Bot. iii. 31; Rohrb. Sil. 95, non auctorum plurimorum) probe distincta sit est mihi res valde dubia. Pace cl. Rohrbach inter semina utriusque speciei discrimen vix ullum invenies, nec notæ differentiales ex inflorescentia allatæ satis constantes. Calyces dentes in *S. vespertina* supra capsulam contracti forsan ad speciem dignoscendam satis valent. *S. vespertina*, Retz, ab auctoribus fere omnibus cum specie omnino diversa (*S. colorata*, Poir.) confusa, a Rohrbach *loc. cit.* suo loco restituta fuit. Hujus synonyma sunt *S. hirsuta* (Poir. Voy. ii. 163), *S. hispida* (Dsf. Fl. Atl. i. 348), *S. bellidifolia* (Jacq. Hort. Vind., non Pourr.), et *S. sabuletorum*, Dub., non Lk.

S. hirsuta genuina est peninsulæ Ibericæ civis, formæ affines in Italia calidiore et Græcia et in Africa boreali obviæ sunt.

SILENE PSAMMITIS (*Link in Spreng. Nov. Prov.* p. 39), = S. villosa (*Boiss. Voy. Esp.* ii. 90, non aliorum), = S. lasiostyla (*Boiss. Diagn. Pl. Or.* ser. 1, viii. 79).

Mar. sept.—Tanger (*Salzm. Exsicc.*)!

Ar. Geog. Species propria peninsulæ Ibericæ et ditionis Tingitanæ.

S. COLORATA (*Poir. Voy.* ii. 163; *Rohrb. Sil.* 114, *non W., nec Schousb., nec DC. Pr.* i. 374), = S. bipartita (*Desf. Fl. Atl.* i. 352, et *Willk. Ic. et Descr.* i. 45, tab. 30), = S. sericea (*Guss. et auct. plurim., non All.*), = S. vespertina (*Rchb. Ic. Fl. Germ.* tab. 279, *et auct. mult., non Retz., nec Boiss. Voy.*).

Mar. sept.—Tanger! (*Salzm. Exsicc.* sub *S. vespertina*)! Inter Tetuan et Tanger! Prope Tetuan (1851 et iterum 1871)!

Mar. occid.—Prope Mogador! Aïn el Hadjar!

Ar. Geog. Regio Mediterranea omnis (inclusa Macaronesia).

—— ——, var. LASIOCALYX (*Soy. W. et God. Sil. Alg.* p. 26, sub *S. bipartita*).

Mar. occid.—In arenosis maritimis prope Mazagan!

SILENE SETACEA (*Viv. Fl. Lib.* 23; *Rohrb. Sil.* 105, *non Otth*), = S. colorata, var. angustifolia, *nob. olim.*

Mar. merid.—In regione inferiore pr. Mesfioua! Ourika! Sektana (*R. et Fr. spec. in herb. Kew.*)!

Accedit ad *S. coloratam* var. *β, decumbens,* Rohrb. *l. c.,*=*S. decumbens* (Biv. Cent. i. 75); sed in *S. setacea* folia omnia tenuia linearia, vel infima lineari-oblonga, caulis tenuis e basi ramosus, tota planta pube tenui adspersa. *S. coloratæ* affinis et post eam enumeranda.

Ar. Geog. In regione desertorum ex Mesopotamia et Palæstina per Africam borealem interiorem diffusa.

S. **GLAUCA** (*Pourr. El. H. Matr.* 1803; *Lag. Gen. et Sp.* p. 15; *Rohrb. Sil.* 117),=S. secundiflora (*Otth in DC. Pr.* i. 375),=S. ambigua, *Cambess. in Soy. W. et God. Sil. Alg.* 24).

Synonyma alia plurima in Rohrb. *l. c.*

Mar. sept.—Tanger (*Salzm. Exsicc.,* sub *S. decumbens, fide Willk. Ic. et Descr., et Rohrbach, l. c.*).

Ar. Geog. Peninsula Iberica. Algeria et forsan ager Tingitanus.

Floræ Maroccanæ dubia civis. Salzmann hanc speciem legit prope Malaga et forsan inter plantas suas Tingitanas specimina nonnulla commiscuit. Qui series Salzmannianas habuerunt plurimi botanici hanc a Tingide nunquam viderunt, et ager Tingitanus a multis botanophilis perlustratus speciem hanc nemini post Salzmann obtulit.

S. **APETALA** (*Willd. Sp. Pl.* ii. 307; *DC. Pr.* i. 369; *Rohrb. Sil.* 118).

Mar. sept.—Prope Tetuan!

Mar. merid.—Prov. Shedma! Sheshaoua! Mesfioua! Seksaoua!

Ar. Geog. In regione Mediterranea calidiore ex Affghanistan usque Macaronesiam late diffusa. Deest in Europa in reg. inter Atticam et Hispaniam Murcicam, et in Africa boreali inter Mare Rubrum et Mostaganem.

S. **CORRUGATA** (*Ball in Journ. Bot.* 1873, 301), = S. canariensis (*Willd. in Spreng.*)? Nomen verisimiliter falsum.

E collo radicis ramosissima, diffusa, glanduloso-pilosa; folia inferiora spathulato-acuminata, superiora lanceolata; pedicelli calycem demum æquantes; bracteæ 2 inæquales, major herbacea, minor subsetacea; flores distantes, ante anthesin nutantes; calyx membranaceus, viridistriatus, nervis parallelis, basi truncatus, vix umbilicatus; petala carnea, biloba, ungue quam calyx longiori; carpophorum capsulæ æquilongum; semina fusca, sat profunde canaliculata, dorso corrugata.

Mar. merid.—In regione media Atlantis Majoris; Aït Mesan! circa 1750 m.!

Affinis *Silene pseudo-Atocion,* Dsf., a pl. nostra differt petalis integris, seminibus multo majoribus vix canaliculatis, calycis tubo longiore. Habitu propior est *S. pendula,* structura omnino diversa.

Monente cel. Cosson spec. nostra ad *S. Canuriensem* (Willd. in Spreng. Neue Entd. iii. 60; Rohrb. Sil. 194, non Otth in DC. Pr. i. 372, referenda sunt, et eandem plantam legit Balansa, anno 1867, in monte Djebel Haid, et secus rivulum Oued Kseb prope Mogador. Vix dubito specimen in herb. Willd. (No. 8633) a Broussonnet communicatum ex ditione Mogadorensi ortum esse, et errore schedæ ex insula Teneriffa prodisse fertur. Dum nomen *Canariensis* incertum et falsum videtur, plantam enumeravi sub nomine triviali a me proposito. Judicent magistri scientiæ nostræ. Icon Webbiana (Phyt. Can. tab. 18) minime exacta vix ad plantam nostram referenda est.

—— ——, var. ADUSTA, = S. adusta (*Ball in Journ. Bot. l. c.*). Proxima præcedenti et pro subspecie a me olim edita.

Planta pumila, erecta, pauciflora; differt insuper a *S. corrugata* foliis angustioribus, bracteis subæqualibus setaceis, petalis albidis, magis profunde bilobis, seminibus (non omnino maturis) pallide luteo-fuscis minus profunde canaliculatis, in fossa dorsali tuberculosis.

Mar. merid.—Prope Seksaoua! in rupibus calidissimis.

S. RUBELLA (*L., DC. Pr.* i. 369; *Rohrb. Sil.* 155).

Mar. sept.—Tanger! (*Salzm. Exsicc.*)!

Mar. merid.—In planitie Maroccana pr. Sheshaoua!

Ar. Geog. Regio Mediterranea, imprimis occidentalis. In Oriente, admodum rara, deest in Macaronesia.

S. INAPERTA (*L., DC. Pr.* i. 376; *Rohrb. Sil.* 165).

Mar. merid.—Ad radices Atlantis Majoris pr. Amsmiz!

Ar. Geog. Regio Mediterranea occidentalis a Corsica et Galloprovincia usque Macaronesiam.

S. MUSCIPULA (*L., Rohrb. Sil.* 170, *non DC. Prod.*), = S. stricta (*DC. Pr.* i. 379, *non L.*).

Mar. merid.—In regione inferiore Atlantis Majoris. Distr. Reraya! In convalle Aït Mesan! Amsmiz! Mzouda! Oued Ghagaia (*Balansa*), *Coss. Index.*

Ar. Geog. Regio Mediterranea, imprimis occidentalis. Deest in Macaronesia, et rarius in Oriente occurrit, forsan cum seminibus introducta. *Silene stricta* (L., Rohrb. Sil. 170), = *S. pteropleura* (Boiss. et Reut. Pug. 18), species affinis sed bene distincta, nascitur in Hispania australi proxima (e. g. pr. San Roque!); hactenus in Imp. Maroccano desideratur.

S. ITALICA (*L.*, sub *Cucubalo, Pers. Syn.* i. 498; *DC. Pr.* i. 381; *Rohrb. Sil.* 218).

Mar. sept.—In monte Beni Hosmar supra Tetuan legit P. B. Webb. Specimen habui ex herb. Webb sub "*S. viscosa*"!

Mar. merid.—In regione inferiore et media Atlantis Majoris. In convalle Aït Mesan (forma typica) circ. 1400 m.! In monte Djebel Tezah (forma depauperata) usque 1900 m.!

Ar. Geog. Regio Mediterranea fere omnis (exclusa Macaronesia). Forma arcte affinis (*S. nemoralis,* W. K.) in Germania orientali, Hungaria, et Rossia meridionali.

SILENE MOLLISSIMA (*L.,* sub *Cucubulo, Sibth. et Sm. Pr. Fl. Gr.* i. 298; *Rohrb. Sil.* 226, *non DC. Pr.* i. 382),=S. velutina (*Pourr. in Herb. Dsf.*; *DC. Pr.* i. 373; *Willk. Ic. et Desc.* tab. 43),=S. Salzmanni *Otth in DC. Pr.* i. 381, *non Bad.*). Var. rosulata,=S. rosulata (*Soy. W. et God. Sil. Alg.* 50, *Exp. bot. Alg.* tab. 82).

Mar. sept.—Tanger!

Ar. Geog. Peninsula Iberica. Africa borealis. Corsica. Scriptores Floræ Orientalis, et imprimis cel. Boissier, siluerunt de hac specie, a Sibthorp, *l. c.* indicata inter Smyrnam et Bursam.

Notæ diagnosticæ quibus *S. rosulata* a *S. mollissima* distinguitur mihi videntur nimis leves et instabiles. Specimen unicum nostrum Tingitanum simillimum est spec. *S. gibraltaricæ* in monte Djebel Santo prope Oran lectis. Quæ vidi et ipse legi in rupibus Gibraltar orientem spectantibus paululum diversa sunt et aliam varietatem sistunt.

—— ——, var. GIBRALTARICA,=S. tomentosa (*Otth in DC. Pr.* i. 383), =S. gibraltarica (*Boiss. El.* p. 29, *et Voy. Esp.* tab. 266; *Rohrb. Sil.* 227).

Mar. sept.—Prope Tetuan legit Webb (spec. in herb. nostro sub "*S. viscoso*")!

Ar. Geog. Nascitur in fissuris rupium Gibraltar et in rupestribus Tetuanensibus.

Pace cl. Rohrbach, ex descriptione incompleta, sed omnino conformi, et loco natali plane apparet *S. tomentosa* esse stirps ipsissima quæ postea cel. Boissier melius descripsit et illustravit. Hanc ego olim legi in rupibus Gibraltar orientem spectantibus iconi Boissierianæ simillimam; sed, ut mihi videtur, est nil nisi var. *S. mollissimæ* quæ fatente cel. Boissier in rupibus septentrionem versus ejusdam montis nascitur.

S. LÆTA (*Ait. H. Kew.* ii. 118, sub *Lychnide, Al. Br. in Flora,* 1843, 373; *Gren. et God. Fl. Fr.* i. 220).

Mar. sept.—Tanger! (*Salzm. Exsicc.*)!

Ar. Geog. Peninsula Iberica, Gallia austro-occidentalis. Ditio Tingitana.

LYCHNIS (*L. Gen.* 584; *DC. Fl. Fr.* iv. 761).

L. CŒLI ROSA (*L.,* sub *Agrostemma*; *Desr. in Lam. Dict.* iii. 644; *DC. Pr.* i. 386).

Mar. sept.—Prope Tetuan legit P. B. Webb! flores, sec. MSS. Webb., albi.

Ar. Geog. Peninsula Iberica. Gallia meridionalis. Italia. Dalmatia. Ditio Tingitana.

—— ——, var. ASPERA (*DC. Pr. l. c.*).

Mar. sept.—Tanger (*Webb Herb.*)! (*Schousb. spec.*)!

Lychnis macrocarpa (*Boiss. et Reut. Diagn. Pl. Hisp.* p. 8; *Expl. Scient. Alg.* tab. 80).

Mar. merid.—Ad radices Atlantis Majoris prope Amsmiz!

Ar. Geog. Peninsula Iberica. Africa borealis.

L. diurna (*Sibth. Fl. Ox.* 145; *Koch, Syn. Fl. Germ.* i. 146), = L. dioica, var *a*, *L.*, = L. sylvestris (*DC. Pr.* i. 386), = Melandrium pratense (*Rœhl. Deutsch. Fl.* i. 254; *Boiss. Fl. Or.* i. 660).

Mar. sept.—In itinere inter Tanger et Tetuan specimen unicum legit *J. D. H.*!

Ar. Geog. Europa fere omnis, exclusa arctica. Africa boreali-occidentalis.

Holosteum (*L. Gen.* 333).

H. umbellatum (*L., DC. Pr.* i. 393).

Mar. merid.—In regione media Atlantis Majoris. Supra Arround circ. 2300 m.! In monte Djebel Tezah circ. 2100 m.!

Ar. Geog. Europa media. Regio Mediterranea omnis (exclusa Macaronesia).

Cerastium (*L. Gen.* 585).

C. glaucum (*Gren. Mon. Cer.* 47), var. **octandrum** (*Gren. l. c.*), = C. tenue (*Viv. Tent. Fl. Cors.* 7), = Mœnchia octandra (*Gay in Perr. Cat. Fréjus*, 55).

Mar. sept.—Tanger! (*Schsb. spec.*)! (*Salzm. Exsicc.* sub *Sagina octandra*)! (*Webb Herb.*)! Prope Tetuan!

Ar. Geog. Species a Greniero *l. c.* definita per Europam mediam et regionem Mediterraneam (exclusa Macaronesia) diffusa, fit rarior in Asia Mediterranea.

C. glomeratum (*Thuill. Par.* 225; *Koch, Syn. Fl. Germ.* i. 132), = C. vulgatum (*Sm. Fl. Brit.* ii. 496; *DC. Pr.* i. 415), = C. viscosum (*Gren. Mon.* p. 25; *Boiss. Fl. Or.* i. 722).

Mar. sept.—Tanger! Cap. Spartel! Prope Tetuan!

Mar. occid.—Mogador (*Lowe Cat.*).

Mar. merid.—In planitie et in Atlante Majore usque in regionem subalpinam. Mesfioua! In convalle Aït Mesan usque 2400 m.! In monte Djebel Tezah circ. 2200 m.!

Ar. Geog. Species per orbem terrarum fere totum diffusa, vestigia hominum et animalium secuta.

Monentibus celebb. Mertens et Koch, Bentham, aliisque magistris, nomina Linnæana *C. vulgatum* et *C. viscosum* diu vexata et ab ipso auctore in Herbario confusa hodie negligenda videntur.

C. pumilum (*Curt. Fl. Lond.* i. fasc. 6, tab. 30; *Gren. Mon. Cer.* 33), = C. pentandrum (*Moris Fl. Sard.* i. 266, *an L.? an DC. Pr.* i. 416).

Mar. sept.—Prope Tanger et inter Tanger et Tetuan legit Lagrange sec. Cosson. In monte Beni Hosmar supra Tetuan specimen nanum inter radices gramineæ cujusdam inveni, nimis incompletum et ideo incertum.

Ar. Geog. Per Europam totam (exclusa arctica) et verisimiliter per omnem regionem Mediterraneam diffusum. Synonymia auctorum incerta. In Macaronesia hæc species et affines hucusque non detectæ.

CERASTIUM BRACHYPETALUM (*Desp. in Pers. Syn.* i. 520; *DC. Pr.* i. 416; *Gren. Mon. Cer.* 36).

Mar. sept.—In monte Beni Hosmar supra Tetuan!

Mar. merid.—In regione subalpina Atlantis Majoris. In convalle Aït Mesan supra Arround, circ. 2400 m.! In monte Djebel Tezah usque 2600 m.!

Ar. Geog. Europa media. Regio Mediterranea omnis (exclusa Macaronesia).

Facie a typo Europæo paululum differt, sed notis gravioribus, et præsertim petalorum unguibus basi barbatis, bracteis herbaceis, inflorescentiæ indole, huc referendum.

C. ARVENSE (*L., DC. Pr.* i. 419), = C. mutabile (*Gren. Mon. Cer.* 68) pro parte.

Mar. merid.—In regione media Atlantis Majoris. In convalle Aït Mesan a 1800 m. usque 2300 m.! In monte Djebel Tezah circ. 2000 m. In jugo Tagherot (*R. et Fr. in Herb. Kew.*)!

Ar. Geog. Herba amphigea. Per omnem Europam, Asiam temperatam, Americam borealem et per montes regionis Mediterraneæ (inclusa Macaronesia) diffusa; nec deest in America australi frigidiore.

STELLARIA (*L. Gen.* 568).

S. MEDIA (*L.*, sub *Alsine*; *DC. Pr.* i. 397).

Mar. occid.—Mogador (*Lowe Cat.*).

Mar. merid.—Mesfioua! In convalle Aït Mesan usque 1400 m.! verisimiliter communis sed cito marcescens.

Ar. Geog. Per orbem terrarum fere totum diffusa, hominum et animalium (imprimis avium) vestigia secuta.

—— ——, var. MAJOR, *Koch*, = S. latifolia (*Pers. Syn.* i. 501; *DC. Pr.* i. 396), = S. neglecta (*Weihe in Bluff et Fingerh. Comp. Germ.* i. 560).

Mar. sept.—Inter Tanger et Tetuan spec. legit J. D. H.!

Ar. Geog. Varietas in umbrosis regionis Mediterraneæ et Europæ calidioris frequens.

S. ULIGINOSA (*Murr. Prod. Goett.* 55; *Rchb. Ic.* fig. 3669), = S. aquatica (*Poll. Pl. Pal.* No. 422; *DC. Pr.* i. 398).

Mar. merid.—In regione subalpina Atlantis Majoris. In ascensu versus jugum Tagherot ultra 2500 m.!

Ar. Geog. In temperatis frigidioribus hemisphæræ borealis. In reg. subalpina montium regionis Mediterraneæ rarius occurrit. Hucusque quoad sciam in Africa non detecta fuit.

STELLARIA ARENARIA (*Salzm. Exsicc.*; *an L. et DC. Pr.* i. 398?).

Mar. sept.—Tanger (*Salzm. Exsicc.*)!

Species mihi non satis cognita, facie *Arenariæ spathulatæ*, Dsf., valde similis. An propria ditionis Tingitanæ?

ARENARIA (*L. Gen.* 777).

Genus a celebb. Bentham et Hooker (Gen. Plant. i. 149) reformatum genera plurima auctorum notis non satis firmis definita includit, quæ sistunt sectiones sequentes. 1. *Arenaria* (auct. recent.). 2. *Mœhringia* (L. Gen. 494). 3. *Rhodalsine* (Gay, in Ann. Sc. Nat. ser. 3, iv. 25). 4. *Alsine* (Wahl. Fl. Lapp. 125). 5. *Minuartia* (L. Gen. 107). 6. *Cherleria* (L. Gen. 570). 7. *Hymenella* (DC. Pr. i. 389). 8. *Gouffieia* (Rob. et Cast. in DC. Fl. Fr. v. 609). 9. *Lepyrodiclis* (Fenzl, in Endl. Gen. Pl. p. 966). 10. *Ammoderia* (Gmel. Fl. Sib. iv. 160). 11. *Merckia* (Fisch. ex Cham. et Schlecht. in Linnæa, i. 59).

A. PUNGENS (*Clem. in Lag. Gen. et Sp.* 15; *DC. Pr.* i. 403).

Mar. merid.—In reg. subalpina Atlantis Majoris. In monte Djebel Tezah circ. 2500 m.!

Ar. Geog. Montes Hispaniæ Granatensis. Atlas Major.

—— ——, var. **GLABRESCENS** (*Ball, in Journ. Bot.* 1873, 301).

Differt a typo Hispanico sepalis glabris, nervo medio prominulo basin versus ciliato, caulibus subglaberrimis, foliis ad basin membranaceam connatis ciliatis, antheris fusco-griseis, nec rubentibus.

Mar. merid.—In regione subalpina Atlantis Majoris, Aït Mesan! versus 2500 m.!

A. SERPYLLIFOLIA (*L., DC. Pr.* i. 411).

Mar. merid.—In planitie Maroccana et in Atlante Majore. Mesfioua haud procul urbe Marocco! Ourika! Aït Mesan 2000–2200 m.! In jugo Tagherot usque 2800 m.! In monte Djebel Tezah circ. 2200 m.!

Ar. Geog. Species per Europam fere omnem et Asiam temperatam et regionem Mediterraneam (inclusa Macaronesia) late diffusa. In ditione Tingitana nondum detecta.

Specimina nostra sæpe inter typum et *A. leptocladon* (Rchb. Cent. xv. tab. 32, = *A. serpyllifolia,* var. *tenuoir,* Koch) media videntur.

In distr. Reraya ad radices Atlantis Majoris legi specimina duo nana nimis incompleta ad *Arenarias* e grege *A. serpyllifoliæ* referenda. In his folia in petiolum brevissimum margine ciliatum sensim attenuata, sepala acuminata pubescenti-scabra, apice setis longioribus coronata. An spec. nova?

A. SPATHULATA (*Desf. Fl. Atl.* i. 358; *DC. Pr.* i. 413), = Stellaria arenaria (*L., Sp. Pl. App.* 1196), = Arenaria cerastoides (*Poir. Dict.* vi. 363).

Mar. sept.—Tanger! (*Salzm. Exsicc.*)! (*Webb Herb.*)! Inter Tanger et Tetuan!

Ar. Geog. Africa boreali-occidentalis. Hispania Granatensis.

Arenaria emarginata (*Brot. Fl. Lus.* ii. 202; *DC. Pr.* i. 406),=A. rosea (*Salzm. Exsicc.*),=A. bætica (*Salzm. Exsicc.*).

Mar. sept.—Prope Tanger! (*Salzm. Exsicc.* sub *A. rosea*)! (*Webb Herb.*)! In monte Djebel Kebir (*spec. ex Herb. Schsb.*)!

Ar. Geog. Peninsula Iberica. Ditio Tingitana.

Ipse auctor speciei et cl. Seringe in DC. Pr. *l. c.* affinitatem proximam cum *A. tenuifolia* viderunt adeo ut de diversitate specifica dubitarunt. Facie est revera similis, nisi petalis emarginatis calyce longioribus, sed structura omnino diversa. In hac capsula *Arenariæ* genuinæ valvis profunde bidentatis, dum *A. tenuifolia* in § *Alsine* (capsulæ valvis integris) retinenda. Ego semper vidi petala calyce sesquilongiora, nec breviora ut dantur in auct. citatis.

A. trinervia (*L., DC. Pr.* i. 412),=Mœhringia trinervia (*Clairv. Man. Herb.* 150, *et plurim. auct. recent.*).

Mar. sept.—In monte Djebel Kebir pr. Tanger! In monte Beni Hosmar supra Tetuan!

Ar. Geog. Europa et Asia temperata. In umbrosis reg. Mediterraneæ Europæ et Asiæ et in Macaronesia infrequens. In Africa boreali rara.

A. procumbens (*Vahl, Symb.* i. 50, tab. 33; *DC. Pr.* i. 413),=A. geniculata (*Poir. Dict.* vi. 365),=Rhodalsine procumbens (*Gay, Ann. Sc. Nat.* ser. 3, x. 25).

Mar. sept.—Prope Tetuan ad ostium fluminis (1851)! Inter Tetuan et Ceuta!

Mar. occid.—Mogador! (*Lowe Cat.*). Agadir (*Coll. Indig.* 1871)!

Mar. merid.—Sat frequens in planitie et in regione inferiore Atlantis Majoris. Prov. Haha! Prov. Shedma! Prope Amsmiz! In convalle Aït Mesan usque 1400 m.! Prov. Ksima (*Coll. Indig, Mardochæus*), *Coss. Index.*

Ar. Geog. Regio Mediterranea Europæ et Africæ borealis. Adest etiam in Macaronesia, sed in Asia Mediterranea desideratur.

Species satis ludibunda quoad formam foliorum et longitudinem sepalorum, sed varietates stabilire inutile duco.

A. tenuifolia (*L., DC. Pr.* i. 405),=Alsine tenuifolia *auct. plurim.*

Mar. sept.—In monte Beni Hosmar supra Tetuan specimen unicum legi!

Ar. Geog. Europa media. Asia temperata. Regio Mediterranea omnis (exclusa Macaronesia).

—— ——, var. glandulosa,=A. viscidula (*Thuill. Par.* 219).

Mar. merid.—In saxosis pr. Seksaoua! Milhain!

Ar. Geog. Fere per totam aream speciei imprimis calidiorem diffusa.

Arenaria fasciculata (*Gouan, Ill.* p. 30; *Jacq. Austr.* tab. 182;

DC. Pr. i. 407, *non Sibth. et Sm. Fl. Gr.* v. 30),=Alsine Jacquini (*Koch, Syn. Fl. Germ.* 125, *et auct. plurim.*).

Mar. merid.—In regione subalpina Atlantis Majoris in convalle Aït Mesan a 2200 m. usque 2500 m.!

Ar. Geog. Europa media, in regione Mediterranea rarius obvia. Citatur in Albania a cel. Grisebach et in montibus Velebith a cel. Visiani. In latere meridionali Alpium Europæ haud infrequens, sed in regionem inferiorem vix descendit.

Nomen triviale *A. fasciculata* a Gouan prius publici juris factum. Quid sit *A. fasciculata*, L. Spec. Pl. ed. 12, iv. 733, eruere non potui. Planta Floræ Græcæ est *Alsine Smithii* (Fzl. Alsin. 57),=*Alsine lancifolia* (Vis. Ic. Fl. Dalm.),=*Alsine fasciculata* (Maly, Enum. Austr. 295, et Vis. Fl. Dalm. iii. 177, tab. xxxiv.). A sp. nostra differt sepalis trinervibus, foliis 5–7-nervibus, cæterisque notis gravioribus.

Specimina nostra a typo Europæo parum diversa sunt sepalis minus inæqualibus. Radix annua vel biennis, vel interdum (?) perennans.

A. SETACEA (*Thuill. Par.* ed. 2, 220; *DC. Pr.* i. 407),=Alsine setacea (*M. K. et auct. plurim.*). Var. ATLANTICA, *nob.*, cui simillima *A. erythrosepala* (Boiss. Diagn. Pl. Or. ser. 1, viii. 98, *et* Fl. Or. i. 679).

Mar. merid.—In regione subalpina et alpina Atlantis Majoris. In jugo Tagherot usque 3100 m.! In monte Djebel Tezah, *J. D. H.*!

Ar. Geog. Species polymorpha per montes regionis Mediterraneæ ex Atlante usque Persiam, et inde in Sibiriam Uralensem diffusa. In Europa media obvia, fit rarior occidentem versus. Deest in Macaronesia, in montibus peninsulæ Ibericæ (?) et in Alpibus Europæ.

Specimina nostra pluribus notis inter *A. setaceam*, Thuill., et *A. fasciculatam*, Gouan, media sunt, et re vera illa, nisi radice perenni, ab hac ægre dignoscitur. Sepala in specim. nostris basin versus obscure trinervia sunt, præsertim in statu juniore; inflorescentia fere *A. setaceæ* typicæ, sed interdum cymoso-corymbosa; folia trinervia, brevia, adpressa, apice cartilagineo prædita.

Cel. Boissier (Fl. Or. i. 680) sex formas seu varietates *A. setaceæ* enumeravit, quibus, pace tanti viri, addendæ sunt *A. erythrosepala*, Boiss., et *A. libanotica*, Boiss. His adjungenda erit *Arenaria filifolia* (Forsk. Fl. Æg.-Arab. p. 211) quæ monente beato J. Gay est *Alsine Schimperi*, Hochst., stirps in montibus Abyssiniæ et Arabiæ obvia. Nostræ plantæ valde proxima est No. 983, Balansa, Pl. d'Algérie (*Alsine setacea*, M. K., var., sec. Cosson). Specimina a monte Djebel Tougourt, Bal. Pl. d'Alg. No. 856 (*Alsine setacea*, var. *pubescens*, Coss.), gaudent habitu diverso et facie potius *A. juniperinæ*. De his novissimis in notula MS. b. Gay scripsit "ab *A. setacea* sine dubio distinctissima." Frustra tamen notas diagnosticas quæsivi. Semina (in spec. nostris nimis immatura) nullomodo ab *A. setacea* diversa videntur.

ARENARIA VERNA (*L.*, *DC. Pr.* i. 405), = Alsine verna *auct. plurim.*, var. BRACHYPETALA, petalis calyce paullo brevioribus oblongo-ellipticis.

Mar. merid.—In regione subalpina et alpina Atlantis Majoris. In jugo Tagherot 2500–3000 m.! In monte Djebel Tezah circ. 2500 m.!

Ar. Geog. Europa media. Asia media et borealis. Montes regionis Mediterraneæ (exclusa Macaronesia).

BUFFONIA (*L. Gen.* 168).

B. TENUIFOLIA (*L. Sp.* 179, *et Herb. ex. b. J. Gay*), = B. annua (*DC. Fl. Fr.* iv. 768, *et Prod.* i. 388).

Mar. merid.—Ad radices Atlantis Majoris sat frequens. Pr. Ourika! Reraya! Gurguri! Seksaoua! et in convalle Aït Mesan!

Ar. Geog. Gallia australis. Hispania. Græcia et (*ex Led.*) prov. Transcaucasicæ.

Radix interdum fit biennis. Specimen legi in distr. Reraya ramis anni præcedentis jam emarcidis, glomerulis floralibus in axillis foliorum præditis, ramis hornotinis inflorescentia racemosa typica donatis.

SAGINA (*L. Gen.* 236).

S. PROCUMBENS (*L.*, *DC. Pr.* i. 389), var. PARVIFLORA, *nob.*

Mar. merid.—In regione subalpina Atlantis Majoris. In jugo Tagherot versus 2600 m.! In monte Djebel Tezah circa 2500 m.!

Ar. Geog. Europa fere omnis et Asia temperata. Montes regionis Mediterraneæ. America borealis et australis.

Præter flores minores specimina nostra typo Europæo videntur omnino conformia.

S. MARITIMA (*Don in Eng. Bot.* tab. 2195; *DC. Pr.* i. 389).

Mar. sept.—In rupibus juxta Cap. Spartel! In litore freti Herculis juxta Ceuta!

Ar. Geog. Europa media et australis in maritimis. Specimina Africana (nostris exceptis) non vidi.

S. APETALA (*L.*, *DC. Pr.* i. 389).

Mar. sept.—Tanger! In monte Beni Hosmar supra Tetuan!

Ar. Geog. Europa media. Regio Mediterranea omnis (inclusa Macaronesia).

S. ciliata (*Fr. Nov. Fl. Suec.* 59; *Rchb. Ic. Fl. Germ.* fig. 4956), = S. patula (*Jord. Obs. Pl. Fr.* p. 23).

Mar. occid.—Casa Blanca!

Forsan prioris var., sed nota diagnostica ex sepalis supra capsulam maturam adpressis, nec patulis cruciformibus, videtur satis constans et cultura immutata. Caracteres cæteri plane variabiles. Haud sine dubio pro subspecie enumeravi.

S. LINNÆI (*Presl, Rel. Hænk.* ii. 14; *Boiss. Fl. Or.* i. 663), = S. saxatilis (*Wimm. Fl. Schles.* 76; *Koch, Syn. Fl. Germ.* 119),=Spergula saginoides (*L., DC. Pr.* i. 394).

Mar. merid.—In regione subalpina Atlantis Majoris. In convalle Aït Mesan usque 2500 m.!

Ar. Geog. Montes Europæ fere totius, Asiæ borealis et Americæ borealis. Hucusque in Africa non indicata.

SPERGULA (*L. Gen.* 586).

S. ARVENSIS (*L., DC. Pr.* i. 394).

Mar. sept.—Tanger! (*Salzm. Exsicc.*)!

Ar. Geog. In arvis Europæ fere totius. Hinc inde in regione Mediterranea (inclusa Macaronesia), in India orientali et in Abyssinia.

S. PENTANDRA (*L., DC. Pr.* i. 394).

Mar. merid.—Misra ben Kara haud procul urbe Mogador!

Ar. Geog. In cultis Europæ et regionis Mediterraneæ (inclusa Macaronesia).

Semina videntur omnino diversa ab illis *S. arvensis*; sed non desunt formæ intermediæ, et hæc forsan melius pro subspecie habenda.

SPERGULARIA (*Pers. Syn.* i. 504; *B. et H. f. Gen. Pl.* i. 125).

Arenarias stipuliferas a cæteris Linnæanis Persoon *loc. cit.* primus separavit, et ad genus novum (*Spergularia*) constituendas proposuit. Nomen igitur *Lepigonum* a plurimis receptum, consentientibus Bentham, Hooker, Boissier, rei botanices magistris, prætermisi.

S. MARINA (*All. Fl. Ped.* ii. 114, sub *Arenaria*; *Wahlb. Fl. Gothob.* 47; *et Kindb. Mon. Lepig.* 18, sub *Lepigono*),=Arenaria rubra β. marina (*L. Fl. Suec.* p. 152),=Arenaria marginata (*DC. Fl. Fr.* iv. 793), = Spergularia marginata (*Boiss. Fl. Or.* i. 733),=A. media (*DC. Pr.* i. 401, *non L.*).

Mar. occid.—Casa Blanca! Mogador!

Ar. Geog. Species amphigea per orbem terrarum (exclusis reg. polaribus) in maritimis diffusa, rarius in terris continentalibus subsalsis obvia.

De *L. media* (L. Sp. Pl. 606) conf. Kindberg, loc. cit. Nomen hodie inextricabile delendum.

S. FIMBRIATA (*Boiss. et Reut. Diagn. Pl. Or.* ser. 2, i. 94; *Salzm. Exsicc. MSS.*; *Kindb. Mon. Lepig.* 21, sub *Lepigono*).

—— ——, var. *a*, TYPICA. Facies *S. macrorhizæ* (Gr. et God. Fl. Fr. i. 276), ramis elongatis sæpissime prostratis, mucrone in foliorum apice ipsorum diametrum æquante vel superante. Semina majore pro parte aptera, cætera margine fimbriata.

Mar. sept.—Tanger in maritimis! (*Boiss. et Reut. loc. cit.*).

Mar. occid.—Casa Blanca!

—— ——, var. β, CONDENSATA. Foliis in ramis brevioribus approximatis, hirtulis, brevissime mucronulatis, floribus numerosis in panicula brevi condensatis, sepalis densius glanduloso-hirsutis, seminibus sæpe (non semper) omnibus apteris, stipulis argenteis maximis.

Mar. occid.—In insula Mogador hanc formam insignem legimus!

—— ——, var. γ, TENUE. Ramis brevioribus tenuibus, erectis vel adscendentibus, foliis sæpius brevioribus mucrone ipsorum diametrum bis terve longiore armatis, seminibus apteris et fimbriato-marginatis commixtis.

Mar. occid.—In arenosis juxta Aïn el Hadjar!

Mar. merid.—In regione inferiore, præsertim versus radices Atlantis Majoris sat frequens. Legimus in prov. Shedma! prope Seksaoua! Milhaïn! et alibi vidimus.

Permultis capsulis scrutatis semina fimbriata nonnulla semper detexi sed in ditione nostra semina aptera certe frequentiora, et in var. β nostra semina fimbriata sat rara. Stipulæ elongatæ nitentes in hac specie insignes. Notæ diagnosticæ in hoc genere parum firmæ, sed hæc inter formas probe distinctas enumeranda videtur.

Ar. Geog. In Hispania Gaditana rara, in territorio Maroccano verisimiliter communis, et in Macaronesia nascitur, nec, quoad sciam, alibi detecta.

SPERGULARIA RUBRA (*L., et DC. Pr.* i. 401, sub *Arenaria*; *Pers. Syn.* i. 504; *Boiss. Fl. Or.* i. 732),=Lepigonum rubrum (*Fries, Fl. Halland.* p. 76; *Kindb. Mon. Lepig.* 40).

Mar. merid.—Prov. Shedma, *J. D. H.*!

Ar. Geog. Europa fere tota (exclusa arctica). Regio Mediterranea omnis (inclusa Macaronesia). Asia temperata.

—— ——, var. PINGUIS (*Fenzl, in Led. Fl. Ross.* ii. 167),=Lepigonum salinum (*Fries, Nov. Fl. Suec. Mant.* iii. 34; *Kindb. Mon. Lep.* 36).

Mar. sept.—In maritimis juxta Ceuta!

Mar. occid.—In maritimis prope Mogador!

Mar. merid.—In prov. Shedma!

—— ——, var. SPERGULOIDES, *nob.*,=Lepigonum sperguloides (*Fisch. et Meyer, Ind. Sem. Hort. Petrop.* 1853, *ex Kindb. Mon. Lep.* 39).

Distinguitur panicula racemosa, pedunculis subaphyllis, seminibus in spec. nostris nigrescentibus nitidis auriculato-excavatis.

Mar. occid.—Legi cum var. priore in maritimis prope Mogador!

Notæ diagnosticæ ab auctoribus, et præsertim a cl. Kindberg in Monographia allatæ, ad species plurimas hujus gregis firmandas, fallaces videntur. Stirpes enim summopere variabiles sunt *Spergulariæ* omnes; et quot species definire credunt auctores, tot formas intermedias natura præbet.

S. DIANDRA (*Guss. Fl. Sic. Pr.* i. 515, sub *Arenaria*; *Boiss. Fl. Or.* i. 733),=Arenaria salsuginea (*Bunge in Led. Fl. Alt.* ii. 163, *Ic.* tab. 409, flores errore lutei),=Spergularia salsuginea (*Fenzl, in Led. Fl. Ross.* ii. 166; *Gren. et God. Fl. Fr.* i. 275),=Lepigonum salsugineum (*Kindb. Mon. Lepig.* 42),=Spergularia patens (*Hochst. in Schimp. Pl. Arab. Exs.* No. 193, *ex Boiss. l. c.*).

Mar. occid.—Casa Blanca!

Mar. merid.—Frequens in saxosis aridis regionis inferioris. Prov. Shedma! Mesfioua! Misra ben Kara!

Ar. Geog. Species Mediterranea, verisimiliter per totam regionem calidiorem diffusa. In Macaronesia nondum detecta. In desertis Asiæ mediæ etiam obvia.

Eodem pacto quo congeneres hæc species etiam ludibunda est. Folia sæpe "obtusiuscula" (*Kindberg*), interdum "mucronata" (*Boiss.*), "glabra" (*Fenzl.*), vel sæpius puberula (*spec. nostra*); sepala occurrunt "margine tenuissime scariosa" (*Kindberg*), vel margine scariosa dorso herbaceo æquilata; stipulæ sæpissime pro genere minimæ, interdum longiores et nitentes. Semina in spec. nostris semper ad calcem diagnosis Boissierianæ "triquetro-obovata, aptera, scabriuscula, margine incrassata," nec margine elevata angustata cristata sicut ea descripsit et delineavit Kindberg *l. c.* Nomen Gussonianum antiquius a Kindberg perperam prætermissum. Flores sunt revera sæpissime, sed non semper, diandri, sed nomen triviale nisi plane erroneum non mutandum. Stirps non semper in locis salsis nascitur, et eodem pacto nomen *S. salsuginea* haud exacte convenit.

POLYCARPON (*L. Gen.* 105).

P. TETRAPHYLLUM (*L.*, sub *Mollugine*; *L. fil. Suppl.*; *DC. Pr.* iii. 376).

Mar. sept.—Pr. Cap. Spartel! Inter Tanger et Tetuan! Juxta Tetuan (1851)!

Mar. occid.—Casa Blanca! Mazagan! Mogador (*Lowe*).

Mar. merid.—Sat frequens in regione inferiore præsertim ad radices Atlantis Majoris. Legimus in prov. Shedma! Prov. Mtouga ad Aïn Tarsil! In convalle Ourika! In convalle Amsmiz circ. 1400 m.!

Ar. Geog. Europa media. Regio Mediterranea omnis (inclusa Macaronesia). Per orbem terrarum hinc inde cum seminibus allatum.

P. alsinefolium (*Biv. St. Rar. Sic. Man.* iii. 7, sub *Hagea*; *DC. Pr.* iii. 376), var. LEIOSPERMUM, *nob.*

A *P. alsinefolio*, cui simillima, differt insigniter var. nostra seminibus lævibus dorso leviter canaliculatis. A *P. peploidi* differt imprimis radice annua, nec perenni, sepalis acutis, nec obtusis subcucullatis.

Mar. occid.—In rupibus insulæ Mogador! et in maritimis haud procul Mogador! Aïn el Hadjar!

Mar. merid.—In distr. Mesfioua haud procul urbe Mogador! Juxta Amsmiz spec. unicum legit J. D. H.!

Ar. Geog. *P. alsinefolium* est totius reg. Mediterraneæ (inclusa Macaronesia) civis, procul a litore maris rarius obvium.

Var. nostræ proximum est *P. arabicum* (Boiss. Diagn. Pl. Or. ser. 1,

x. 13). Hoc est etiam *P. tetraphyllo* arcte affine et cum *P. alsinefolio* sicut subspecies enumerandum.

Polycarpon Bivonæ (*J. Gay in Duchartre, Rev. Bot.* ii. 572; *Walp. Ann. Bot. Syst.* i. 82), var. **herniarioides**, *nob.*,= P. herniarioides (*Ball in Journ. Bot.* 1873, 301).

Mar. merid.—In convalle Aït Mesan a 2300 m. usque 2500 m.! In monte Djebel Tezah circ. 2400 m. (*J. D. H.*)!

Cel. Cosson certum me fecit stirpem Atlanticam fore nil nisi var. *P. Bivonæ*, Gay, sp. polymorphæ in Europa rarissimæ, sed in Algeria e regione calidiore usque subalpinam late diffusæ. Var. nostra differt ramis brevibus condensatis, cymis paucifloris, laciniis calycinis obtusis apice paululum inflexis. Stamina in spec. ex Aït Mesan 3, in illis ex Djebel Tezah cæterum simillimis 5, semina nimis immatura. Calycis laciniæ prorsus ecarinatæ, exteriores linea tenui dorso notatæ.

P. Bivonæ, monente b. Gay, est ipsissima *Hagea polycarpoides* (Biv. St. Rar. Sic. Man. ii. No. 3) a Candolleo et Bertoloni erronee ad *P. peploides*, DC., relata.

Ar. Geog. Africa boreali-occidentalis. Sicilia. Occurrit etiam ex cel. Gay, *l. c.*, in insulis Canariensibus.

Lœflingia (*L. Gen.* 52).

L. hispanica (*L., DC. Pr.* iii. 380; *Schousb. Gew. Marok.* 12).

Mar. occid.—In arenosis ad ripam fluvii prope Mogador! (*Schsb. l. c.*). Prope Aïn el Hadjar ad radices montis Djebel Hadid!

Ar. Geog. Per regionem Mediterraneam imprimis occidentalem diffusa, sed infrequens; deest in Italia continentali et in Græcia, necnon in Macaronesia, in Oriente rarissime occurrit.

Polycarpia (*Lam. Journ. Hist. Nat.* ii. 8, *ex DC. Pr.* i. 371; *Webb, Phyt. Can.* i. 156, nomen emendatum).

P. nivea (*Ait. Hort. Kew.* ed. 1, i. 286, et *Willd. Sp. Pl.* i. 1119, sub *Achryranthe*; *Webb, Spic. Gorg.* p. 104),= P. gnaphalodes (*Schousb. Gew. Marok.* 104, sub *Illecebro*; *Poir. Dict. Suppl.* iv. 473; *DC. Pr.* iii. 373),= P. microphylla (*Cav. Anal. Cienc. Nat.* iii. 25),= P. glauca *Chr. Sm. in Tuck.* p. 250, ex *Webb l. c.*),= P. candida (*Webb, Phyt. Can.* i. 158, tab. 21).

Mar. occid.—In arenosis maritimis pr. Mogador! (ubi jam legerant Schousboe et Broussonnet et Balansa).

Nomen triviale *nivea* prioritate gaudet et a b. Webb rite restitutum.

Ar. Geog. Species Canariensis et ins. Cap. Viridis, deest in Madeira, et ultra plagam Mogadorensem in terris continentalibus nondum visa.

PORTULACACEÆ (*Juss. Gen.* 313; *Endl. Gen.* 940, ordo reformata et nomen emendatum).

PORTULACA (*L. Gen.* 602).

P. OLERACEA (*L., DC. Pr.* iii. 353).

Mar. occid.—Saffi! Mogador (*Lowe Cat.*).

Mar. merid.—Seksaoua (*J. D. H.*)! et alibi visa in ruderatis.

Ar. Geog. Planta cosmopolita per regiones temperatas calidiores totius fere orbis diffusa.

MONTIA (*L. Gen.* 101).

M. FONTANA (*L., DC. Pr.* iii. 362).

Mar. merid.—In regione subalpina Atlantis Majoris. Legimus in convalle Aït Mesan vix florentem circ. 2500 m.!

Ar. Geog. Herba per Europam omnem et Asiam temperatam diffusa. Nec in Macaronesia, nec in Algeria indicatur.

TAMARISCINEÆ (*Desv. Diss. Inst. Gall. Lect.* ex *DC. Pr.* iii. 95).

TAMARIX (*L. Gen.* 375).

T. AFRICANA (*Poir. Voy.* ii. 189; *DC. Pr.* iii. 95).

Mar. sept.—Tetuan (*Webb Herb.*)! Inter Tetuan et Ceuta!

Ar. Geog. Regio Mediterranea occidentalis. Deest in Macaronesia.

T. GALLICA (*L., DC. Pr.* iii. 96; *Schousb. Gew. Marok.* 131).

Mar. sept.—Tanger! (*Schousb. spec.*)! Tetuan (*Webb Herb.*)!

Mar. occid.—Mogador! (*Lowe Cat.*).

Ar. Geog. Regio Mediterranea occidentalis (exclusa Macaronesia).

Specimen a nobis prope Tanger lectum, *T. Canariensi* simile, non differt a specie. Proxime affinis *T. Anglica,* Webb, habitat secus litora Atlantica Galliæ occidentalis. In Anglia vix indigena est.

T. speciosa (*Ball in Journ. Bot.* 1873, 301).

Frutex 8–10-pedalis; cortex fusco-purpureus, nitidus; racemi coëtanei in ramis lignosis et in hornotinis subsessiles; bracteæ ovatæ, minus quam in *T. gallica* acutæ; sepala oblongo-rotundata, rarius ovata subacuta; petala cito caduca; flores pentandri; capsula (pro grege) longa, pulchre rosea.

Mar. merid.—Copiose secus torrentem in distr. Mesfioua! ad 600 m.

Frutex elegans speciosa, herba viridi, fructu roseo, a *T. Gallica* et *T. Africana* facie valde diversa.

Sicut subspecies hic enumerata, forsan melius cognita pro sp. omnino diversa retinenda.

T. ARTICULATA (*Vahl, Symb.* ii. 48, tab. 32; *DC. Pr.* iii. 96).

Mar. merid.—Vidimus sine fl. vel fr. in planitie haud procul urbe Marocco, ramus sterilis tantum lectus!

Ar. Geog. Regio desertorum; verisimiliter ex Marocco meridionali usque fines Indiæ Orientalis diffusa.

HYPERICINEÆ (*DC. Théor. Elém.* p. 214).

HYPERICUM (*L. Gen.* 902).

H. PERFORATUM (*L., DC. Pr.* i. 549).

Mar. sept.—Tanger (*ex Herb. Schsb. spec.*)! (*Salzm. Exsicc.*)! Tetuan (1851)! Specimen eheu vermibus erosum!

Mar. merid.—Ad radices Atlantis Majoris. Tasseremout! Aït Mesan versus 1250 m.! Amsmiz! Tamarut (*R. et Fr. spec. in Herb. Kew.*)!

Ar. Geog. Europa omnis (exclusa arctica). Regio Mediterranea fere omnis (inclusa Macaronesia). In America boreali videtur spontaneum.

Specimina ex Mar. meridionali habent lacinias calycinas longiores quam in typo Europæo.

H. UNDULATUM (*Schousb. in Willd. Enum.* p. 811), = H. quadrangulum, var. ε (*Choisy in DC. Pr.* i. 548), = H. bæticum (*Boiss. Voy. Esp.* i. 114, tab. 34).

Mar. sept.—Vidi in Herb. Kewensi specimen Tingitanum a Salzmann receptum cui scheda "*H. tetragonum*, var. *acutangulum*," *H. bætico*, Boiss., satis conforme.

Ar. Geog. Peninsula Iberica. Africa borealis. Madeira. Insul. Azoricæ (*H. decipiens*, Wats.).

Suadente cel. Trevirano (in Hyp. Gen. Animad. p. 9) nomen antiquum Schousbœanum *H. bætico* restitui, et, donec experientia melius docebit, velut speciem distinctam enumeravi.

H. AUSTRALE (*Ten. Syll. Fl. Neap.* 385; *Gren. et God. Fl. Fr.* i. 315), = H. repens (*Poir. Voy.* ii. 224; *Choisy in DC. Pr.* i. 548, *non L., nec Boiss. Fl. Or.* i. 801).

Mar. sept.—In monte Beni Hosmar supra Tetuan! In monte Djebel Dersa pr. Tetuan (*Webb Herb.*)!

Ar. Geog. Regio Mediterranea occidentalis (quoad peninsulam Ibericam incertum). Forma affinis in Gallia occidentali.

Quid sit *H. repens*, L., dijudicare non audeo. Suadente viro gravissimo, cel. Boissier, erit idem ac *H. perforatum* δ. *punctatum* (Choisy in DC. Prod.), = *H. alpestre* (Stev. Verz. p. 95), = *H. linarioides* (Bosse in Ott. et Dietr. Gartenzeit. iii. 90). Specimina plurima Orientalia quæ vidi a stirpe Gallica (*H. repens*, DC. Pr.) certe diversa sunt, et propius accedunt *H. hyssopifolio*, Vill. Hæc novissima est species valde polymorpha quacum cel. Boissier (Fl. Or. i. 799) plurimas formas ab ipso olim pro speciebus novis propositas semel conjunxit. Dubium mihi adest an notæ differentiales quibus vir celeb. *H. repens* suum ab *H. hyssopifolio* distinxit stabiles sint: quoad rationem calycis et capsulæ maturæ hæc certe variabilis est. *H. repens* (Sibth. et Sm. Fl. Gr. tab. 775, non L.) est species Cretensis, *H. trichocaulon* (Boiss. & Held. Diagn. Pl. Or. ser. 1, viii. 110). Hoc mihi valde proximum *H. australi*, Ten., videtur, sed sec. auctores in sectione *Millepora*, Spach, collocatur, dum species nostra inter *Tæniocarpia*, Spach, enumeranda est.

Hic notandum est specimina *H. australis* ex Italia meridionali et Sicilia quæ vidi (e. g. spec. ab ipso Tenore in Herb. Gay, hodie Kewensi), et Algeriensia plurima a me scrutata cum spec. Gallicis et Maroccanis haud adamussim convenire. Pluribus notis priora inter *H. australe* et *H. linarifolium* (Vahl, Symb. i. 65), = *H. linearifolium* (DC. Prod. et auct. plurim.) media sunt. Re vera characteres quibus distinguitur species Tenoreana, scil. folia latiora, sepala margine glandulis paucis sessilibus, nec numerosis pedicellatis, prædita, non gravis momenti sunt, et hæc melius ad subspeciem reducenda erit.

HYPERICUM TOMENTOSUM (*L., DC. Pr.* i. 551).

Mar. sept.—Tanger (*Salzm. Exsicc.*)!

Mar. occid.—Aïn el Hadjar! Prov. Haha prope Mogador! Agadir (*Coll. Indig.* 1871)!

Mar. merid.—Prov. Shedma! Mskala! Mtouga!

Ar. Geog. Regio Mediterranea occidentalis ex insulis Sicilia et Melita ad litora Atlantica. Deest in Macaronesia.

H. pubescens (*Boiss. Elench.* 42; *Walp. Rep.* i. 383), = H. suberosum (*Salzm. Exsicc.*).

Mar. sept.—Tanger (*Salzm. Exsicc.*)! (*Schousb. spec. ex Herb.*)! (*Webb Herb.*)! Tetuan prope urbem ed ad ostium fluminis, 1851!

Mar. occid.—Casa Blanca! Mazagan!

Mar. merid.—Sat frequens in regione inferiore. Aïn Beida! Mesfioua! Mzouda! Sektana (*R. et Fr. spec. in Hb. Kew.*)!

Ar. Geog. Peninsula Iberica. Africa boreali-occidentalis.

Tam *H. tomentosum* quam *H. pubescens*, quod pro subspecie teneo, in reg. meridionalibus fiunt glabriora et minora.

Specimina typica *H. pubescentis* omnino diversa ab *H. tomentoso* videntur, sed non desunt formæ intermediæ (e. g. spec. prope Alemque in Estremadura Lusitanica a Bar. de Paiva lecta, in Herb. Kew. asservata). Spec. nostra ex Mesfioua etiam subintermedia sunt.

H. COADUNATUM (*Chr. Smith in Buch, Beschr. Canar.* 153; *Webb, Phyt. Canar.* i. 45, tab. 4), var. ATLANTICUM, *nob.*?

Mar. merid.—Nondum florens legimus in convalle Aït Mesan circ. 1700 m. s. m.!

Folia et caulis foliaceus cum spec. Canariensibus adamussim conveniunt, sed spec. nostra nimis incompleta. Cel. Cosson benevole communicavit spec. in monte Djebel Ouensa ab indigeno Ibrahim lecta, cui scheda "*H. atlanticum*, Coss. MSS.," verisimiliter huc etiam referenda. Donec cel. auctor meliora docebit, hoc mihi videtur nimis proximum *H. coadunato.* A sp. Canariensi parum distant *H. Naudinianum* (Coss. et Dur. in Bull. Soc. Bot. Fr. ii. 308) stirps Algeriensis, et *H. caprifolium* (Boiss. El. 41; Voy. Esp. tab. 35) Hispaniæ australis incola; et hæc forsan sicut subspecies vel varietates ad *H. coadunatum* ducenda.

Ar. Geog. Species in insulis Canariensibus; varietas in Atlante Majori; formæ proximæ affines in Algeria et Hispania.

HYPERICUM PERFOLIATUM (*L., Sibth. et Sm. Prod. Fl. Gr.* ii. 116; *Gris. Spicil.* i. 224),=H. ciliatum (*Lam. Dict.* iv. 170; *DC. Pr.* i. 552; *Boiss. Fl. Or.* i. 812),=H. dentatum (*Lois. Fl. Gall.* p. 499; *DC. Pr.* i. 552),=H. montanum (*Desf. Fl. Atl.* ii. 216, *non L., nec aliorum*).

Mar. sept.—Tanger (*Salzm. Exsicc.*)! (*Webb Herb.*)! Tetuan (*Webb Herb.*)! Inter Tetuan et Ceuta!

Ar. Geog. Regio Mediterranea fere omnis.

Cel. Grisebach nomen Linnæanum ab auctoribus recentioribus prætermissum vindicavit. Specimen in Herb. Linn. est omnino *H. ciliatum,* Lam.

MALVACEÆ (*R. Br. Cong.* p. 8).

MALOPE (*L. Gen.* 841).

M. MALACOIDES (*L., DC. Pr.* i. 429), var. STIPULACEA,=M. stipupulacea (*Cav. Anal. Cienc. Nat.* iii. 74; *DC. Pr.* i. 429).

Mar. sept.—Frequens circa Tanger! Tetuan (1851)!

Mar. occid.—? Mogador sec. Broussonnet in Cav. loc. cit. B. Broussonnet interdum plantas originis diversæ semel miscuisse certe scimus. Hanc speciem legit in ditione Tingitana, ubi frequenter occurrit. Nemo recentiorum eam vidit in vicinitate urbis Mogador.

Ar. Geog. Species per regionem Mediterraneam (exclusa Macaronesia) late diffusa; varietas in Africa boreali-occidentali et in Hispania australi obvia est.

M. TRIFIDA (*Cav. Diss.* ii. 85, tab. 27; *DC. Pr.* i. 429).

Mar. sept.—Tanger (*Schousb. spec.*)! (*Salzm. Exsicc.*)! Tetuan (*Webb Herb.*)!

Ar. Geog. Hispania Bætica et ditio Tingitana.

ALTHÆA (*L. Gen.* 839).

A. HIRSUTA (*L., DC. Pr.* i. 437), var. GRANDIFLORA (*Ball in Journ. Bot.* 1873, 302).

Differt a typo corolla subduplo majore, purpureo-rosea, stipulis longioribus, angustioribus, subcuneatis, nec ut in typo ovatis, foliis magis divisis, laciniis augustioribus, planta tota minus hirsuta.

Mar. merid.—Specimina manca legimus in prov. Mtouga! et Shedma!

Melius explorata forsan sicut species nova distinguenda. In herb. beati J. Gay (nunc Kewensi) adsunt specimina duo prope Monspelium lecta, quibus adjecit in scheda "*Althæa mutica*, Gay MSS. (1824)." In his corolla magna ut in nostra, sed stipulæ et folia omnino *A. hirsutæ.*

Ar. Geog. A. hirsuta per Europam mediam et regionem fere omnem Mediterraneam (exclusa Macaronesia) diffusa est.

LAVATERA (*L. Gen.* 842).

L. TRIMESTRIS (*L., DC. Pr.* i. 438).

Mar. sept.—Frequens pr. Tanger ! (*Salzm. Exsicc.*) ! Tetuan (1851) !

Mar. merid.—Sat frequens ad radices Atlantis Majoris. Mesfiona ! Tasseremont ! Ourika ! Sektana (*R. & Fr. spec. in Herb. Kew.*) !

Ar. Geog. Per regionem Mediterraneam (exclusa Macaronesia) late diffusa ; in Algeria rara.

—— ——, var. MALVÆFORMIS, *nob.*

Floribus minoribus pallide purpureis, foliis subrotundatis, superioribus vix angulatis. Herba tota longius pilosa.

Mar. merid.—Distr. Reraya versus 1100 m. !

L. OLBIA (*L., DC. Pr.* i. 438).

Mar. sept.—In monte Beni Hosmar pr. Tetuan nondum florentem legimus !

Ex indumento et calycibus fructibusque emarcidis anni præcedentis potius ad typum quam ad var. sequentem referenda.

—— ——, var. HISPIDA, = L. hispida (*Desf. Fl. Atl.* ii. 118, tab. 171 ; *DC. Pr.* i. 438).

Mar. sept.—Tanger (*Salzm. Exsicc.*) ! In rupibus pr. Cap. Spartel ! In montibus Djebel Dersa et Beni Hosmar (*Webb Herb.*) !

Ar. Geog. L. Olbia, cum var. *L. hispida,* in umbrosis et rupestribus regionis Mediterraneæ occidentalis habitat, nunquam a mari remota. Deest in Macaronesia. Species proxime affinis (*L. unguiculata,* Desf.) Græciam, Siciliam, Cyprum et Cretam incolit.

L. MARITIMA (*Gouan, Ill.* p. 46, tab. 11 ; *DC. Pr.* i. 439).

Mar. merid.—Prope Aïn el Hadjar !

Ar. Geog. Regio Mediterranea occidentalis (exclusa Macaronesia).

L. CRETICA (*L., DC. Pr.* i. 439), = L. sylvestris (*Brot. Fl. Lus.* ii. 227, *non Cyr.*), = Malva pseudolavatera (*Webb, Phyt. Can.* i. 29), = M. hederæfolia (*Vis. Fl. Dalm.* iii. 205).

Mar. sept.—Tanger ! (*Salzm. Exsicc.*) ! Tetuan (1851) ! Inter Tetuan et Ceuta !

Mar. occid.—Casa Blanca ! Rabat (*R. et Fr. spec. in Herb. Kew.*) ! Mogador ! (*Lowe Cat.* ; *Balansa* ; *Coss. Index*).

Mar. merid.—Pluries visa ; legimus prope Amsmiz ! et in ruderatis urbis Marocco !

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From Vol. IX. the Zoological and Botanical portions of the Journal have been published separately, and each consists of Eight numbers.

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The Library is open to the Fellows and their friends daily, between the hours of 10 and 4, and on Meeting-days at 7 P.M.

With certain restrictions, Fellows are allowed to borrow Books from the Library.

The Council-room, which will in future be used as a reading-room, will be open daily from 10 A.M. till 6 P.M., except on Saturdays, when till 4 P.M. only.

Communications intended to be made to the Society may be addressed to the President, or to the Secretary, at the Society's Apartments, Burlington House, Piccadilly, London.